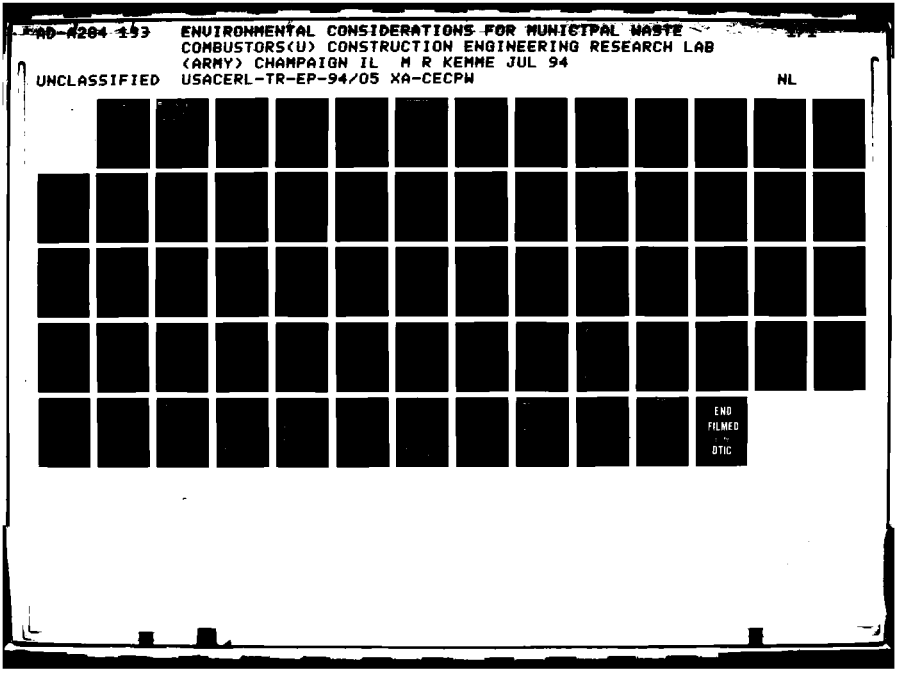
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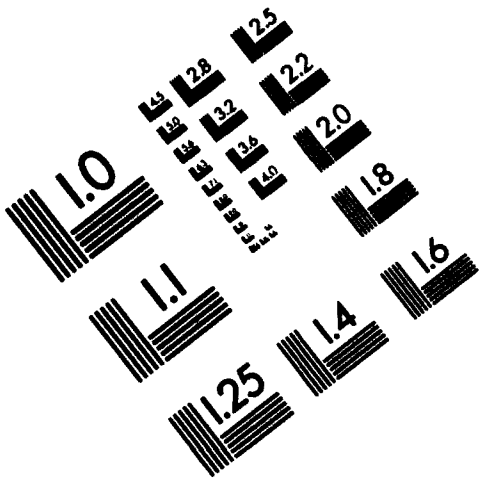


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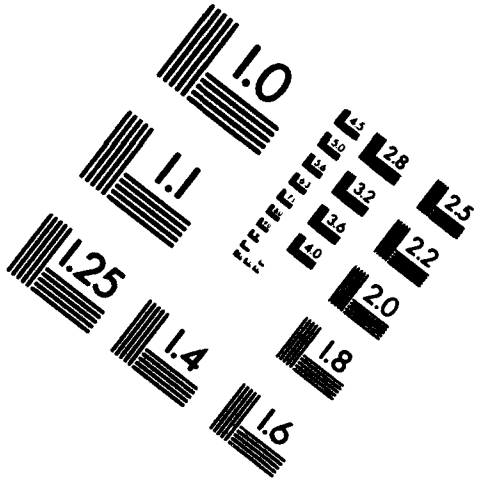


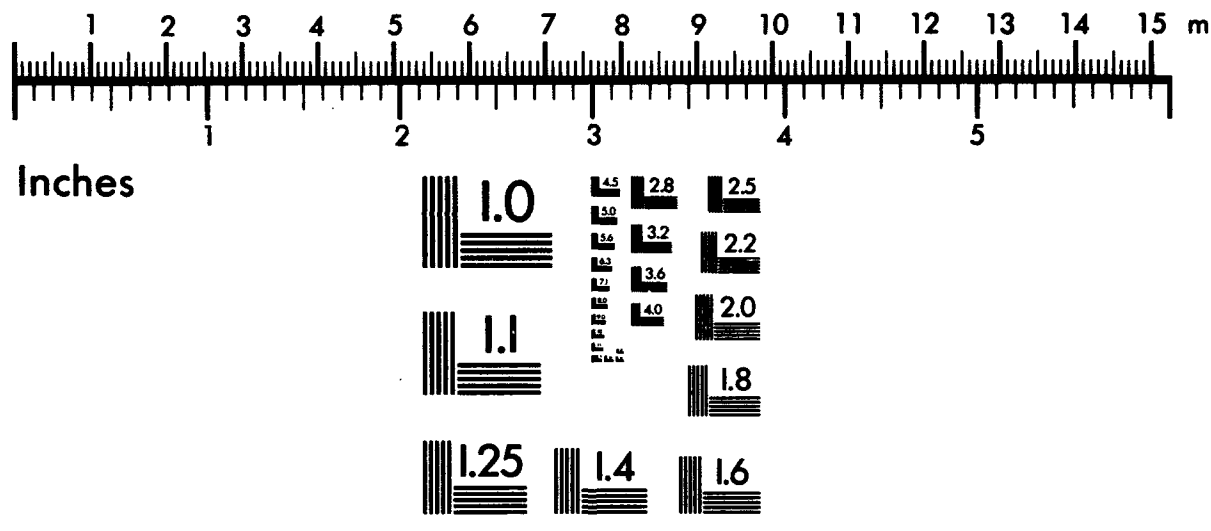


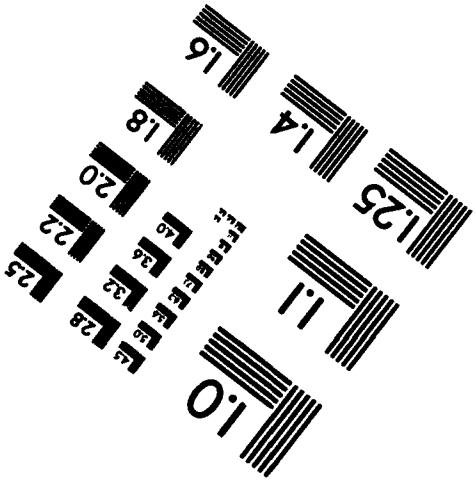


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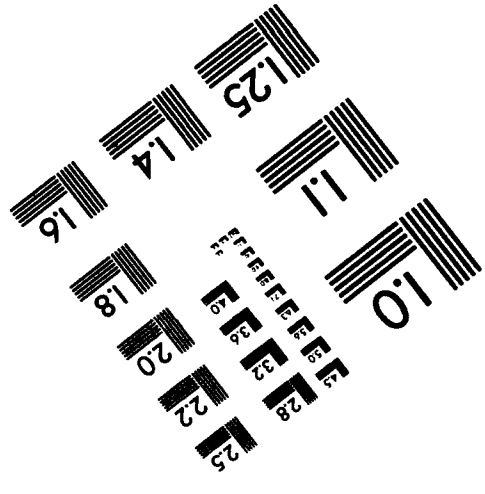

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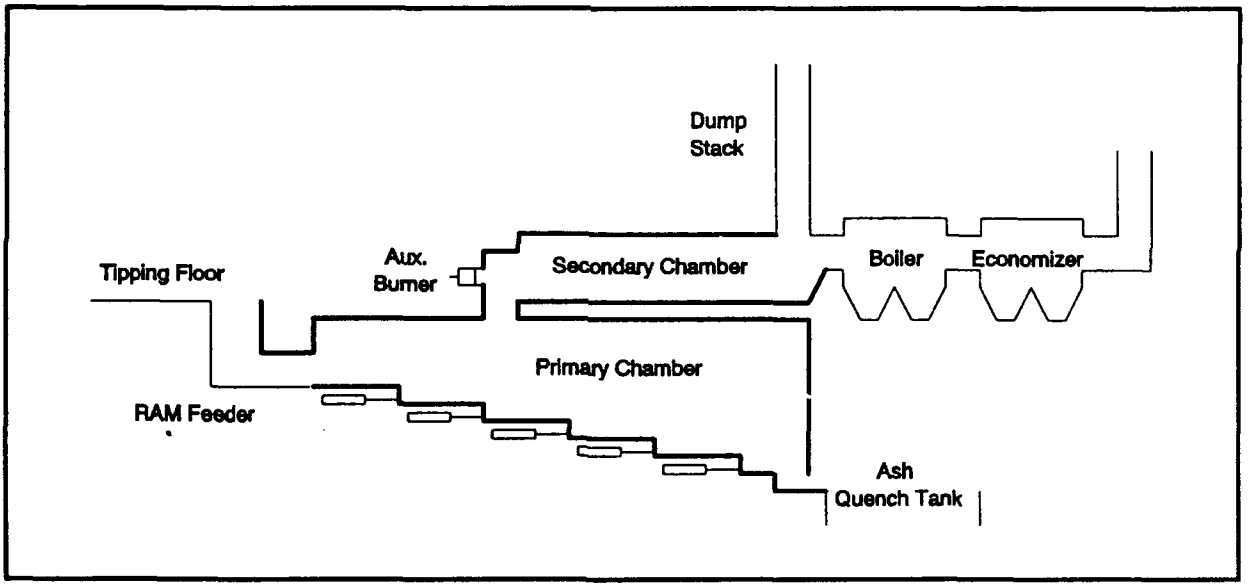
USACERL Technical Report EP-94/05
July 1994

AD-A284 133

# Environmental Considerations for Municipal Waste Combustors

by
Michael R. Kemme




Strict Federal regulations have been developed to minimize adverse environmental impacts associated with both new and existing municipal waste combustors (MWCs). These regulations have led to development of many air pollution control technologies including combustion modifications and add-on control devices, fabric filters, and absorption techniques.

This report provides technical information on types of municipal waste combustors (MWCs) and environmental control technologies. The information will be useful to installations, Major Commands, and Corps of Engineers Districts involved in planning or designing MWC facilities.

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## FOREWORD

This investigation was conducted for the Office of the Assistant Chief of Engineers (OACE) under Project 4A162720A896, "Environmental Quality Technology"; "Environmental Design and Construction"; Work Unit TR1, "Environmental Issues Related to Incinerator Emissions Control and Waste Management." The U.S. Army Center for Public Works (USACPW) technical monitor was Malcolm McLeod, CECPW-ES.

The work was done by the Environmental Engineering Division (EP), Environmental Sustainment Laboratory (EL), U.S. Army Construction Engineering Research Laboratories (USACERL). Michael R. Kemme was the USACERL principal investigator. Dr. Edgar D. Smith is Acting Chief of CECER-EP, and William D. Goran is Chief, CECER-EL. The USACERL technical editor was Gloria J. Wienke, Information Management Office.

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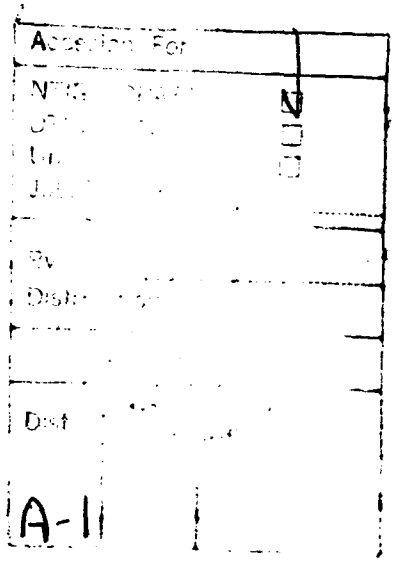

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# ENVIRONMENTAL CONSIDERATIONS FOR MUNICIPAL WASTE COMBUSTORS

## 1 INTRODUCTION

### Background

The problems associated with municipal solid waste (MSW) management are approaching a critical point nationwide. The solid waste generation per capita in the United States is the highest in the world and has risen over the past several decades. Because of the continuing increase in generation rate, environmental concerns with landfilling or ocean dumping, the declining capacity of landfills, and increasing cost of disposal in landfills, communities have begun considering alternate ways of managing solid waste. The all-inclusive solution to the pressing issue of solid waste management lies in integrating source reduction, recycling, landfilling, and municipal waste combustion.

Many communities are considering or are using municipal waste combustors (MWCs) as part of their waste management programs. Currently about 15 percent of the solid waste stream is being burned by MWCs (U.S. Environmental Protection Agency 1989). Waste combustors can reduce waste volume by 70 to 90 percent, depending on the components of the waste and compaction of the waste stream. The reduction in volume will significantly extend the life of existing landfills. MWCs also recover the energy content of waste by generating electricity or steam from the combustion process.

Army installations are not immune to the solid waste dilemma. Installations can be compared to small urban areas with all the same MSW problems. Installations are also an important part of the communities in which they are located and therefore may wish to participate in regional solutions to solid waste management. In some cases, MSW combustion may be the most economically and environmentally sound management option for Army installations. One factor in favor of MWCs is that Army installations can be good customers for steam generated by MWCs to supply district heating systems or other steam-driven processes.

MWCs have a number of environmental problems associated with their operation. MWCs emit small particulate matter ($PM_{10}$), carbon monoxide, nitrogen oxides, toxic organics, acid gases, and heavy metals into the atmosphere. Regulations pertaining to these emissions are becoming stricter and effective pollution control is becoming more costly. In addition, MWCs can produce solid and liquid wastes that may be regulated.

### Objective

The objective of this research is to provide installations, the Environmental Branch at Major Commands, and Corps of Engineers Districts involved in planning or designing MWC facilities with technical information about types of MWCs, environmental problems of MWCs, applicable environmental regulations, and environmental control technologies.

## Approach

Literature related to the environmental considerations of recovering heat from and reducing the volume of municipal solid waste through combustion was thoroughly reviewed. The information included Army experience with MWCs. The important aspects of the literature review were extracted and categorized, and are summarized in this report.

## Mode of Technology Transfer

It is recommended that the information in this report be used to update Corps of Engineers Guide Specification (CEGS) 11181, *Incinerators, General Purpose* (February 1990).

## 2 TYPES OF MUNICIPAL WASTE COMBUSTORS

Several technologies are used in MWC systems, including mass burn combustors (modular, traveling grate, and rotary combustors), refuse-derived fuel combustors, and fluidized-bed combustors.

### Mass Burn Combustor

The mass burn combustor is the predominant type of incinerator being used for MSW. It can accept MSW that has undergone minimal preprocessing. A mass burn combustor may be a modular (or starved air), a traveling grate, or a rotary combustor type. A detailed description of all MWC technologies can be found in Griggs, et al. 1988.

*Modular Combustor*

A modular MWC typically is a small, prefabricated system with a capacity between 5 to 100 tons per day.* This system usually uses a two-chamber, starved air combustion approach. The low capacity and prebuilt structure of a modular combustor makes it the most logical choice for most Army applications. Figure 1 shows a flow diagram for a typical modular MWC.

Usually, MSW is taken from the tipping floor and fed by a ram feeder into the first combustion chamber where the waste is burned under low oxygen (starved air) conditions. In the first combustion chamber, both solid and gaseous products of incomplete combustion are formed. The gases and small particles pass into the second combustion chamber where the combustion process is completed. An auxiliary burner, usually fired by natural gas, keeps the temperature above 1800 °F in the secondary chamber. After leaving the second combustion chamber, the hot flue gas will pass through an economizer and heat recovery boiler where the flue gases are cooled to around 450 °F before entering the air pollution control system.

Ash from the primary combustion chamber (bottom ash) is pushed from the bottom of the chamber into an ash quench system. Two or more modular MWCs usually are installed at small facilities to allow for maintenance activities and to provide a more flexible operation under varying feed rate conditions.

*Traveling Grate Combustor*

A traveling grate mass burn combustor usually is much larger than a modular MWC, with a capacity ranging from about 150 to 750 tons per day. Figure 2 shows a flow diagram for a traveling grate MWC.

MSW is dumped into a tipping bay where large objects are removed by an overhead crane. The crane also loads the MSW into a feed hopper where it is fed into the combustion chamber by a hydraulic ram. The traveling grate moves the MSW through the combustion chamber with a tumbling action. Air is added at multiple points underneath the grate system to dry the MSW and as a source of combustion air. Additional combustion air is usually added above the traveling grates, in a burnout zone, to ensure good flue gas mixing and to complete the combustion process. The temperature in the burnout zone is maintained above 1800 °F to ensure destruction of organic compounds. The flue gas then passes through a boiler and economizer where the temperature is reduced to between 350 and 450 °F before entering the

*A metric conversion table is on page 27.

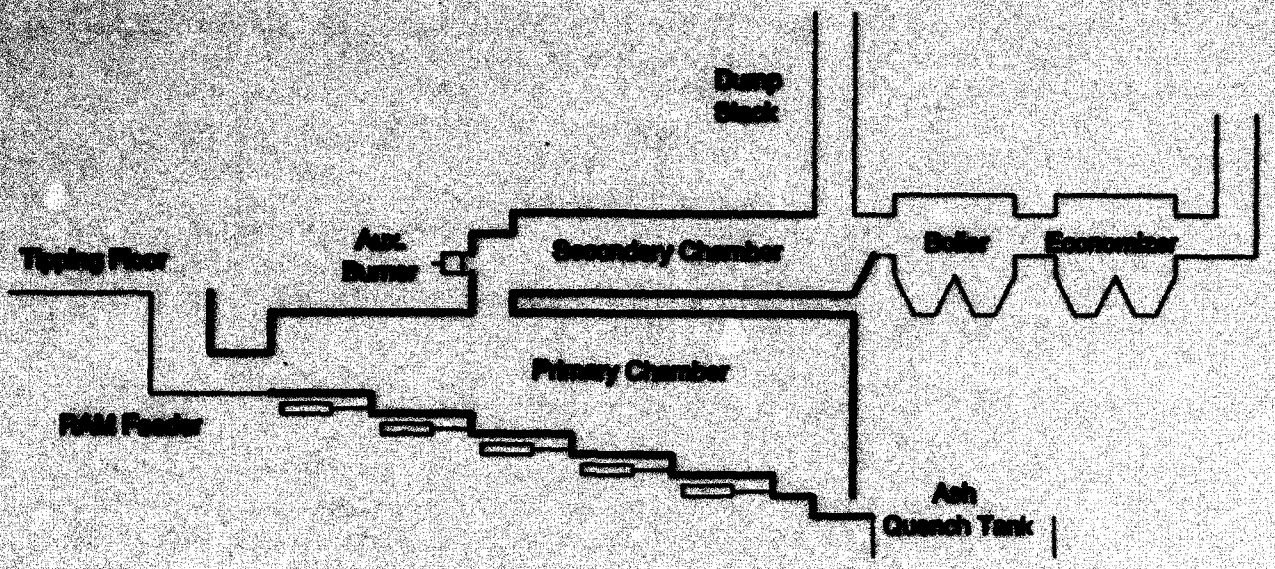


**Figure 1. Modular Mass Burn Municipal Waste Combustor.**

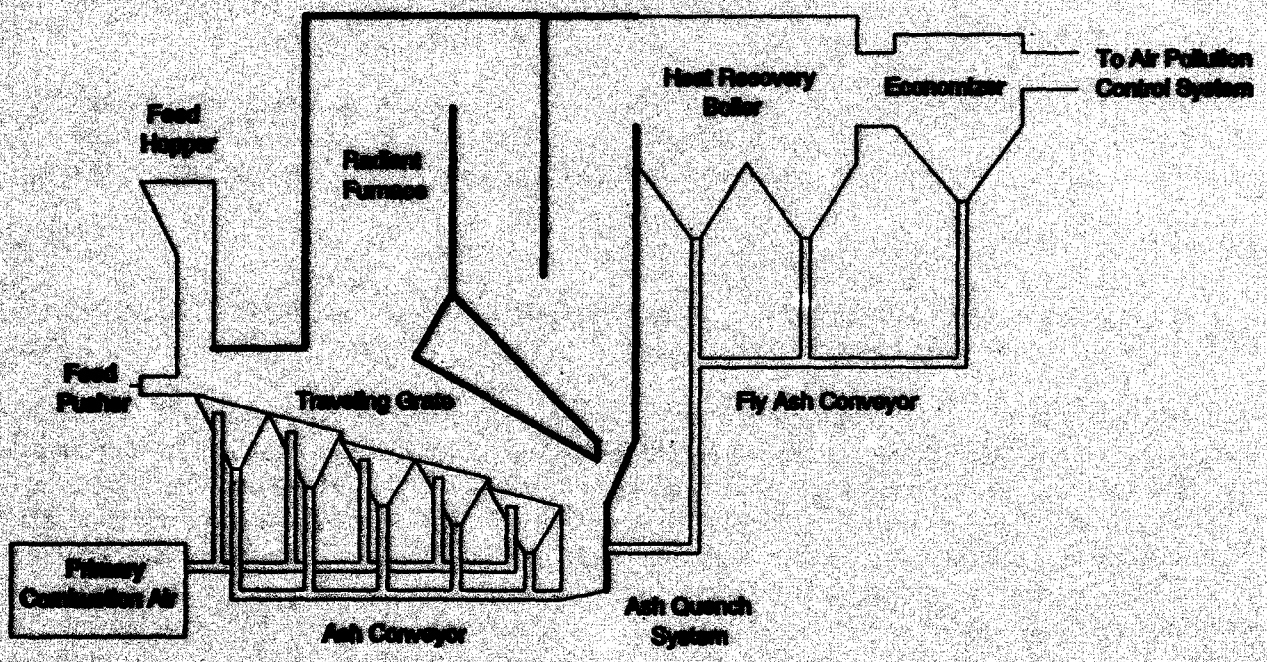


**Figure 2. Traveling Grate Mass Burn Municipal Waste Combustor.**

air pollution control system. The ash remaining at the end of the traveling grate falls into an ash quench system.

*Rotary Combustor*

Some mass burn MWCs use a water-cooled rotary combustion chamber. This system typically has a capacity range of 200 to 450 tons per day. Refuse is fed into the combustor in the same way as in a traveling grate system. The rotating combustor barrel is mounted on a slight angle and rotates at 10 to 20 revolutions per hour. The rotation and angle of the combustion chamber causes the waste to slowly tumble through the rotary combustor onto an ash burnout grate. Preheated combustion air is fed to the combustor through multiple points to provide good mixing and combustion control. The flue gas leaving the rotary combustor is maintained around 1800 °F. The flue gas passes through a boiler and economizer before entering the air pollution control system.

**Refuse-Derived Fuel Combustors**

A refuse-derived fuel (RDF) combustor is designed to use waste that has been processed to remove noncombustible or recyclable materials. The specific design of an RDF combustor depends on the degree of waste preprocessing. In its simplest form, RDF is formed by shredding refuse, magnetically removing ferrous metals, and using the air classification process to minimize potential ash production. RDF is often further processed to remove other noncombustible materials and to form pellets of fuel. RDF combustors are usually quite large, ranging in capacity from 400 to 1000 tons per day. Because of the large capacity and the need for specialized MSW preprocessing equipment, an RDF-fueled MWCs is not suited for typical Army installation use.

# 3 ENVIRONMENTAL PROBLEMS

MSW incineration has the potential to emit a wide range of pollutants to the environment. These potential emissions arise from compounds present in the MSW stream and are formed as a part of the normal combustion process, or as a result of incomplete combustion. Table 1 lists the principal emissions of concern and their sources. Table 2 shows emission factors for some of these pollutants. The emission factors can be used to compare the relative mass emissions of the contaminants.

**Table 1**

**Principal MWC Emissions and Sources**

| Pollutant | Principal Source |
|---|---|
| Particulate matter | Ash in waste stream |
| Acid gases | |
| HCl | Chlorinated plastic in waste stream |
| $SO_2$ | Sulfur compounds in waste stream |
| $SO_3$ | Oxidation of $SO_2$ in flue gas |
| HF | Fluorocarbons in waste stream |
| $NO_x$ | Air and fuel nitrogen conversion |
| CO | Incomplete combustion |
| Heavy metals (arsenic, cadmium, lead, mercury) | Metal compounds in waste stream |
| Organic compounds (dioxin, furans) | Products of incomplete combustion or contained in waste stream |

**Table 2**

**Emission Factors for MWC**

| | Type of Incinerator | | |
|---|---|---|---|
| | Modular Starved Air | Other Mass Burn | Refuse-Derived Fuel |
| Particulate Matter | | | |
| $PM_{10}$ | 1.4* | 14 | 44 |
| Total | 0.12 | 0.18 | 0.13 |
| Lead | 0.12 | 0.18 | 0.13 |
| $SO_2$ | 1.7 | 1.7 | 1.7 |
| $NO_x$ | 4.4 | 3.6 | 5.0 |
| CO | 3.4 | 2.2 | 3.6 |

*All values are pounds per ton, uncontrolled.

In a study comparing results of 21 risk assessments at MWCs (Levin, et al. 1991), polychlorodibenzodioxins (PCDDs), polychlorodibenzofurans (PCDFs), and cadmium were found to contribute more significantly to the total carcinogenic risk from MWC stack emissions than other contaminants. In addition, the contribution to total risk of all indirect routes of exposure (ingestion and dermal contact) exceeded that of the direct inhalation route for most studies reviewed.

### Particulate Matter

Particulate matter consists primarily of noncombustible inorganic material entrained in the flue gas. Particulate matter typically ranges in size from less than 1 micron to about 50 microns. The uncontrolled particulate matter emission rates vary substantially for the different types of MWCs. Modular incinerators produce the lowest levels of uncontrolled emissions with RDF-fired units having the highest.

### Acid Gases

Hydrogen chloride (HCl), sulfur dioxide ($SO_2$), and hydrogen fluoride (HF) are formed during the combustion of waste materials containing chloride, sulfur, and fluoride compounds. A small fraction of the $SO_2$ is oxidized to sulfur trioxide ($SO_3$). In the presence of water, these gases react to form hydrochloric, sulfurous, hydrofluoric, or sulfuric acid. It is believed that the chlorinated plastics are the major contributor of chlorine for HCl formation.

### Nitrogen Oxides

Nitrogen oxides ($NO_x$) are found predominantly in the form of nitrogen oxide (NO) and are a product of most combustion processes. Nitrogen, either bound to the fuel or found in the combustion air, is converted to $NO_x$ at high temperatures. Conversion of atmospheric nitrogen ($N_2$) to $NO_x$ requires much higher temperatures than the conversion of fuel-bound nitrogen. Most MWCs use a staged combustion design that limits the formation of $NO_x$ from atmospheric nitrogen.

### Carbon Monoxide

Carbon monoxide (CO) is a product of incomplete combustion of organic compounds found in MSW. Complete combustion refers to the complete oxidation of all fuel carbon to $CO_2$. Carbon monoxide is a good indicator of combustion efficiency. A high CO emission rate is indicative of poor combustion conditions within MWCs.

### Heavy Metals

Heavy metals enter the MSW stream as components of a variety of consumer products such as batteries, plastics, paper products, and metal alloys. A review of lead and cadmium studies (Korzun and Heck 1990) determined that most of the cadmium enters the waste stream in the combustible fraction (plastics and pigments), while lead is contained in both combustible and noncombustible discards (batteries, plastics, and pigments). Lead, cadmium, mercury, and arsenic are the heavy metal emissions of greatest concern for MWCs.

Temperatures commonly encountered in MWCs usually lead to thermal decomposition of metallic compounds in waste. For example, the heating of metallic compounds to over 1300 °F during combustion can lead to reduction processes such as:

$$HgS + O_2 \rightarrow Hg + SO_2$$
$$HgO + C \rightarrow Hg + CO$$

where the mercuric sulfide (HgS) and mercuric oxide (HgO) in the waste feed react with oxygen ($O_2$) in the combustion air and fuel carbon (C), respectively, to produce elemental mercury (Hg), sulfur dioxide ($SO_2$), and CO (Brna 1991). After the combustion gases are cooled, during energy recovery or before flue gas cleaning, some elemental metal species combine with $O_2$ to form metal oxides, while other species combine with chlorine ($Cl_2$) to form metal chlorides. Volatile metals and metallic compounds will condense on particles as flue gases cool. Condensation concentrates the volatile species on fine particles since smaller particles have a greater surface area per unit mass than larger particles. Therefore, the lower size fraction of the particulate matter is enriched with condensable volatile metals and metallic compounds.

## Organic Emissions

Organic emissions result from incomplete combustion of organic compounds found in MSW. The organic pollutants of primary concern to the public and to regulators are PCDDs and PCDFs. Figure 3 shows the generalized molecular structures of all PCDDs and PCDFs. Many isomers are possible; 75 for PCDD and 135 for PCDF. Organic emissions can arise from incomplete destruction of PCDDs and PCDFs already in the waste stream and the formation of PCDDs/PCDFs somewhere within the MWC or downstream of the combustor. The incomplete destruction of organic PCDD/PCDF precursors is a factor in these compounds' formation. At temperatures typical of MWC systems, PCDDs and PCDFs will condense onto particulate matter.

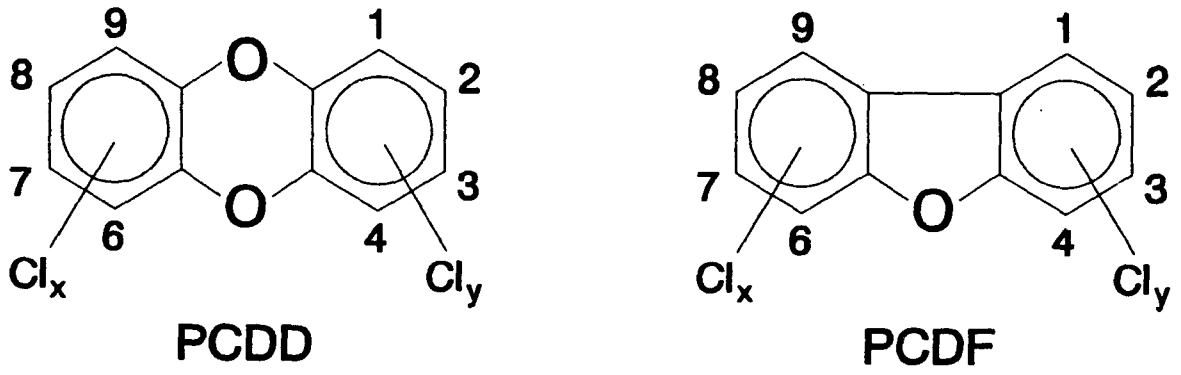


**Figure 3. Generalized Molecular Diagram for Polychlorodibenzoufurans and Polychlorodibenzodixins.**

# 4 REGULATORY CONSIDERATIONS

The regulation of MWCs on a national level is in a state of change. On February 11, 1991, the U.S. Environmental Protection Agency (USEPA) issued the New Source Performance Standards (NSPS) and Emission Guidelines for MWCs larger than 250 tons per day. The Clean Air Act Amendments of 1990 (CAA90) were enacted on November 15, 1990. During debate over the provisions of the CAA90, a controversy over which requirements should be included in the NSPS and Emission Guidelines for MWCs was also occurring. This confusion over MWCs led to the inclusion of provisions in the CAA90 that relate directly to MWCs. The USEPA was required to review and broaden the scope of the NSPS for MWCs by November 15, 1991 and to propose regulations for MWCs less than 250 tons per day by November 15, 1992. At the time of this report (summer 1993), neither activity had been completed. Because of the new language in the CAA90, the new requirements will be stricter. These national regulations are important since, by law, they serve as a minimum baseline for all state MWC regulations.

## Existing MWC Regulations

The USEPA has promulgated regulations that affect both new and existing MWCs with a capacity over 250 tons per day (40 CFR 60). The regulations do not affect MWCs with a capacity less than 250 tons per day. Existing MWCs must comply with Emission Guidelines that divide MWCs into two size categories: (1) "large," with a capacity greater than 250 tons per day but not more than 1100 tons per day or (2) "very large," with a capacity greater than 1100 tons per day. New MWCs must comply with the NSPS, which generally are more stringent than Emission Guidelines.

The NSPS and Emission Guidelines establish emission limitations for metals (particulate matter is used as an indicator), organics (PCDD/PCDF), and acid gases ($SO_2$, HCl). Control of $NO_x$ is also required for new MWCs, but not for existing MWCs. Table 3 is a summary of emission limitation values for existing and new MWCs. In addition, both the NSPS and Emission Guidelines require the application of good combustion practices (GCP). Carbon monoxide emission limits are set for different types of MWCs as an indicator of GCP. Table 4 shows CO emission limitations and other requirements for GCP.

Both NSPS and Emission Guidelines are based on the application of best demonstrated technology (BDT). Criteria for BDT depend on the size and age of the MWC facility. Table 5 shows BDT criteria for used by the USEPA to set emission limits for NSPS and Emission Guidelines. Other technologies may be used by MWC facilities to achieve required emission limitations.

## Clean Air Act Amendments of 1990 (CAA90)

Under the new Air Toxics title, the CAA90 include a new Section 129 entitled "Solid Waste Combustion." Section 129 applies to a range of solid waste incinerators including MWCs, medical waste incinerators, infectious waste incinerators, and industrial waste incinerators. For MWCs, Section 129 directs that the NSPS be broadened and specifies a revision schedule. First, Section 129 authorizes USEPA to issue the final NSPS and Emission Guidelines, but limits the applicability of these standards to MWCs with a capacity greater than 250 tons per day. Second, Section 129 directs the USEPA to review and revise the NSPS and Emission Guidelines within a year, to be fully consistent with Section 129. The revised NSPS and Emission Guidelines must include emission limits for mercury, cadmium, and lead for both new and existing MWCs; the addition of MWC siting requirements; and the addition of NOx standards for existing MWCs. The NSPS and Emission Guidelines must be based on the application of maximum achievable control technology (MACT) as defined in CAA90, Title III. The definition for

**Table 3**

**Summary of USEPA's Emission Limitations for MWCs**

| Size of MWC | Pollutant Measure | Emission Limit[1] |
|---|---|---|
| Existing MWCs | | |
| Large (>250 tpd and ≤ 1100 tpd) | PCDD/PCDF[2] | 125 ng/dscm |
| | PCDD/PCDF (RDF plants)[2] | 250 ng/dscm |
| | PM | 69 mg/dscm |
| | HCl | 50% reduction or 25 ppmv[3] |
| | $SO_2$ | 50% reduction or 30 ppmv (24-hr averaging period)[3] |
| | Opacity | 10% (6-min averaging period) |
| Very Large (>1100 tpd) | PCDD/PCDF[2] | 60 ng/dscm |
| | PM | 34 mg/dscm |
| | HCl | 90% reduction or 25 ppmv[3] |
| | $SO_2$ | 70% reduction or 30 ppmv (24-hr averaging period)[3] |
| | Opacity | 10% (6-min averaging period) |
| New MWCs | | |
| Large (>250 tpd) | PCDD/PCDF[2] | 30 ng/dscm |
| | PM | 34 mg/dscm |
| | HCl | 90% reduction or 25 ppmv[3] |
| | $SO_2$ | 70% reduction or 30 ppmv (24 hr averaging period)[3] |
| | NOx | 180 ppmv (24-hr averaging period) |
| | Opacity | 10 % (6-min averaging period) |

1 All emission limits are corrected to 7 percent $O_2$ on a dry basis.
2 PCDD/PCDF limits are measured as total tetra- through octa- chlorinated PCDDs and PCDFs.
3 Less stringent limit applies.

**Table 4**

**Good Combustion Practices**

| Parameter | Limit |
|---|---|
| Maximum load | 110% of load observed during PCDD/PCDF compliance test |
| Maximum temperature at particulate matter control device inlet | 30 °F above temperature during PCDD/PCDF compliance test |
| CO Emissions[1] | |
| Modular | 50 ppmv (4-hr averaging period) |
| Mass burn waterwall | 100 ppmv (4-hr averaging period) |
| Mass burn refractory | 100 ppmv (4-hr averaging period) |
| Fluidized bed combustor | 100 ppmv (4-hr averaging period) |
| Mass burn rotary water wall | 100 ppmv (24-hr averaging period)[2] |
| RDF stoker | 150 ppmv (24-hr averaging period)[3] |
| Coal/RDF cofired | 150 ppmv (4 hour averaging period) |
| Operator certification and training | All operators certified by ASME or State; training manual and training for other personnel |

1 All CO emission limits are corrected to 7 percent $O_2$ on a dry basis.
2 For Emission Guidelines, CO limit is 250 ppmv for mass burn rotary waterwall combustors.
3 For Emission Guidelines, CO limit is 200 ppmv for RDF stoker combustors.

**Table 5**

**Best Demonstrated Technology Used to Set NSPS and Emission Guidelines for MWCs**

| MWC Size | Best Demonstrated Technology |
|---|---|
| Existing MWCs | |
| Large (>250 tpd and ≤ 1100 tpd) | GCP, dry sorbent injection, electrostatic precipitator (ESP) |
| Very Large (>1100 tpd) | GCP, spray dryer absorption (SDA), ESP |
| New MWCs | |
| Large (> 250 tpd) | GCP, SDA, fabric filter<br>NOx control: selective noncatalytic reduction |

MACT is stricter than the definition for BDT, which was the control technology basis for the existing NSPS and Emission Guidelines. Third, Section 129 directs the USEPA, within 2 years, to adopt NSPS and Emission Guidelines for MWCs with a capacity equal to or less than 250 tons per day that are fully consistent with Section 129.

As of the summer 1993, neither the regulations for small or large MWCs have been proposed. The USEPA has decided to combine the two efforts into the same project. There is concern that the changes to the regulations required by the CAA90 may be too costly when compared to the environmental benefit. No timetable has been set as to when the new standards and guidelines will be issued. The new regulation(s) may apply to all MWC capacities or distinguish between various capacities.

**State Regulations**

In addition to USEPA standards, many states and local air pollution control districts have developed requirements for MWCs. Many of these standards or permit conditions are more stringent than USEPA standards. The Appendix lists addresses and telephone numbers for state and local air pollution regulatory bodies. These sources should always be contacted to answer questions relating to current MSW environmental regulations.

# 5 AIR POLLUTION CONTROL SYSTEMS

## Carbon Monoxide Controls

Carbon monoxide (CO) emissions are controlled by using "good combustion practices." Complete combustion requires that MWCs be designed and operated to provide an excess of oxygen in the combustion air, adequate turbulence to create good mixing of air and combustible materials, a high temperature zone, and sufficient residence time in the high temperature zone. For MWCs, the high temperature combustion zone should be greater than 1800 °F and the residence time within this zone should be 1 or 2 seconds. Good combustion practices will also reduce the emissions of organic pollutants by completely oxidizing organics in the MSW stream and by inhibiting the formation of toxic organic compounds downstream of the combustion zone.

Maintaining proper combustion conditions within MWCs is challenging because of the widely varying fuel conditions (moisture content, energy content, etc.) of the waste stream. The combustor is normally equipped with adequate instrumentation to measure rapidly changing combustion conditions. MSW feed rates, combustion air control, and auxiliary fuel rates can all be controlled either manually or as part of a feedback control system to maintain optimal conditions.

## Nitrogen Oxides Controls

Nitrogen oxide ($NO_x$) emissions are controlled by modifying combustion conditions to inhibit $NO_x$ formation or through the use of add-on controls. Most MWCs use a staged combustion design. The initial combustion of MSW occurs in a fuel rich/oxygen lean zone followed by a fuel lean/oxygen rich zone to complete the combustion. The staged combustion approach lowers the peak flame temperature and limits the amount of oxygen available to react with nitrogen in the combustion air. Staged combustion is effective in reducing the formation of $NO_x$ from air nitrogen conversion but is not very effective in limiting the conversion of fuel-bound nitrogen to $NO_x$. Therefore, some $NO_x$ formation is expected in all MWCs.

Another MWC design/operational feature that can reduce the formation of $NO_x$ is flue gas recirculation. This system recycles relatively cool flue gas containing combustion products and lower oxygen contents into the primary combustion chamber. Nitrogen oxide formation is inhibited by the same phenomena that occur in staged combustion; lower peak flame temperature and reduced availability of oxygen to the flame. A process of injecting natural gas and recirculated flue gases above the combustor grate has been demonstrated to reduce $NO_x$ and CO emissions while reducing excess air requirements (Abbasi et al. 1991).

Combustion modifications can lower $NO_x$ emissions but some $NO_x$ formation is inevitable; flue gas controls are necessary to reduce emissions even further. Two of the most used $NO_x$ flue gas control technologies are selective catalytic reduction (SCR) and selective noncatalytic reduction (SNCR).

Control systems that use SCR inject ammonia upstream of a catalytic reactor. The catalytic material can be a number of shapes (honeycomb plates, parallel ridged plates, rings, tubes, or pellets) and can be made from a variety of base metals (titanium, copper, iron, chromium, nickel, molybdenum, cobalt, and vanadium). The reactor operates at a temperature between 600 and 650 °F and reduces $NO_x$ to nitrogen. SCR control systems require less ammonia than SNCR systems because of the beneficial effects of the lower temperature of reaction and the presence of the catalyst. Selective catalytic reduction has been successfully applied to a wide range of combustion sources with a removal rate of about 80 to 85 percent.

However, because MWC flue gas contains compounds that can poison the catalyst, the reactor must be placed downstream of the acid gas and particulate control systems and the flue gas must be reheated to the reactor's operating temperature. These restrictions have limited the use of this technology for MWCs in the United States.

SNCR control systems also use ammonia to reduce $NO_x$ but injection takes place in the high temperature (1600 to 1900 °F) regions of MWCs. Anhydrous ammonia, gaseous ammonia, and urea solutions are all used as sources of ammonia. The ammonia and $NO_x$ react according to the following competing reactions:

$$2NO + 4NH3 + 2O_2 \rightarrow 3N_2 + 6H_2O$$

$$4NH_3 + 5O_2 \rightarrow 4NO + 6H_2O$$

At flue gas temperatures above 1900 °F, the second reaction predominates; oxidation of ammonia to $NO_x$ increases and SNCR can actually result in an increase in overall $NO_x$ emissions. At temperatures below 1600 °F, $NO_x$ reduction falls off and ammonia breakthrough increases. The excess ammonia can react with sulfuric acid and hydrochloric acid to form ammonia salts that can contribute to fouling and the formation of a visible ammonia chloride plume (Hurst and White 1986).

A process developed by the Exxon Corporation (Thermal De-$NO_x$) uses ammonia injected into the flue gas. This process has been applied to many combustion sources including MWCs. Large jets inject ammonia into the furnace at about a 2:1 to 3:1 ratio of ammonia to NO. Thermal De-$NO_x$ is sensitive to MWCs' combustion conditions. Changes in fuel rate, fuel energy content, excess air rate, or boiler load can significantly change flue gas conditions at the ammonia injection site, and cause major changes in control efficiency. Therefore, MWCs using feedback control systems to stabilize combustion conditions, are more successful in limiting $NO_x$ production by ammonia injection. Thermal De-$NO_x$ can be retrofitted onto older MWCs, but there can be difficulties in locating the injection system at the optimal point. Ammonia injection has shown considerable potential on a bench scale as a simultaneous control technology for PCDD/PCDF, HCl and $NO_x$ emissions (Takacs and Moilanen 1991).

Urea injection has been successfully used to control $NO_x$ emissions from MWCs in the United States and Europe. Urea injection has the advantage of not using a hazardous material (ammonia) for operation. In this process, an aqueous solution containing urea and/or proprietary additives is injected into the MWC flue gas stream. These reagents react with $NO_x$ to form nitrogen, carbon dioxide, water vapor, and small amounts of ammonia. One urea injection process uses urea injection followed by methanol injection within the heat transfer section of the boiler at temperatures of 1400 to 1900 °F. Methanol is used to provide substantial reduction of ammonia slip and/or ammonia salt deposits. Between 1740 °F and 1830 °F at 65 percent $NO_x$ removal, ammonia slip (gaseous emission) of 2.5 to 5.0 ppm (without methanol) can be reduced to less than 1.0 ppm (Jones et al. 1989).

**Particulate Controls**

Particulate emissions are primarily controlled by electrostatic precipitators (ESPs) or fabric filters, although wet scrubbers are sometimes used on small MWCs or in series with ESPs for additional control. Electrostatic precipitators are installed either alone or as a component of an acid gas control system. Fabric filters usually are installed downstream of a quench tower or spray dryer where the conditions of increased flue gas humidity and lower flue gas temperatures protect filter bags from thermal degradation (Brown et al., 1988).

*Electrostatic Precipitators*

Electrostatic precipitators collect particulate matter by introducing a strong electrical field in the flue gas that imparts a charge to flue gas particles. The charged particulate matter is then collected on large surface area plates that have an opposite electrical charge. The collected particulate is removed from the plates by periodic rapping. The agglomerated material on the plates falls into a collection hopper for removal. Table 6 presents key design parameters typical of MWC particulate emission control.

The lower and upper ranges of design parameters reflect the use of an ESP for purely particulate control and the use of an ESP as part of an acid gas cleaning system, respectively. Although the particulate loading to an ESP is much higher when acid gas controls are used, the number of fields and the specific collection area required to achieve similar particulate emission levels does not change significantly because the lower ash resistivity and higher moisture content of the flue gas improves ESP performance. Incinerators that have been retrofitted with spray dryers generally have been able to maintain the same level of particulate emissions (e.g., 0.01 to 0.015 gr/dscf [grains/dry standard cubic foot] @ 12 percent $CO_2$).

Rigid frame and rigid electrode ESPs predominate over weighted wire types in MWC applications. These designs perform better in the environment of sticky fly ash and corrosive gases typical of MWC flue gas. Electrode failures are less frequent especially where higher rapping forces are used to dislodge sticky fly ash from collector plates.

The ESP's insulator compartment must be designed to minimize effects of corrosion and fly ash stickiness. A pressurized ventilation system with heated air is often used to keep insulators clean and reduce electrical tracking problems.

*Fabric Filters*

Both reverse-air and pulse-jet type fabric filters are used to control particulate emissions from MWCs. Each has advantages and disadvantages of operation that should be evaluated on a case-by-case basis. Either type is capable of controlling particulate emissions down to levels required by regulations. Table 7 presents design parameters typically used for MWC fabric filter applications.

**Table 6**

**ESP Design Parameters**

| | Particulate | Acid Gas Control |
|---|---|---|
| Particulate loading, gr/acf (grains/actual cu ft) | 0.5-9 | 0.5-9 |
| Required efficiency, % | 98-99.9 | 98-99.9 |
| Number of fields | 3-4 | 3-4 |
| Specific collection area, sq ft/1000 acfm | 400-550 | 400-550 |
| Average secondary voltage, kV | 35-55 | 35-55 |
| Average secondary current mA/1000 cu ft | 30-50 | 30-50 |
| Gas velocity, ft/sec | 3.0-3.5 | 3.0-3.5 |
| Flue gas temperature, °F | 350-450 | 230-300 |
| Flue gas moisture, % vol | 8-16 | 12-20 |
| Ash resistivity, ohm-cm | 109-1012 | 108-109 |

**Table 7**

**Fabric Filter Design Parameters**

| | Reverse Air | Pulse Jet |
|---|---|---|
| Operating temperature, °F | 230-450 | |
| Fabric type | Woven fiberglass or Nomex | |
| Fabric coating | 10% Teflon B or acid resistant | |
| Fabric weight, oz/yd$^2$ | 9.5 | 16 or 22 |
| Bag diameter, inches | 8 | 6 |
| Net air-to-cloth ratio | 1.5-2.0:1 | 3.5-4.0:1 |
| Minimum compartments | 6 | 4 |
| Overall pressure drop, in. water gauge | 4-6 | 8-10 |
| Estimated bag life, years | 3-4 | 1.5-2 |

The temperature ranges shown represent operation after both a dry quench chamber (350 to 450 °F) and a spray dryer (230 to 300 °F). For these temperature ranges, woven fiberglass is the most common fabric, although Nomex fabric is also used. The fabric is generally coated with 10 percent Teflon B; acid resistant coating also is used.

The main advantages of pulse-jet fabric filters are the lower capital cost and smaller size. However, these fabric filters operate at double the air-to-cloth ratio of reverse air filters and at nearly double the pressure drop and the cloth cleaning method more violently flexes the fabric material. These factors result in more frequent cleaning of the filter bags and substantially shorter bag life.

Reverse-air fabric filters are much larger than pulse-jet fabric filters because their design requires half the air-to-cloth ratio of pulse-jet filters. Although reverse-air fabric filters have a greater capital cost, the total evaluated cost for plants exceeding 15 years of life is lower than for pulse-jet filters. A reverse-air filter typically has lower particulate emissions than pulse-jet filters.

Most fabric filters are used in conjunction with an acid gas pollution control system. Compared with systems without acid gas control, the flue gas entering the fabric filter has a larger particulate loading, a lower temperature (240 to 300 °F), a higher moisture content (12 to 20 percent), and is closer to the dew point. These flue gas conditions can lead to severe corrosion and plugging of fabric material. Specific features must be incorporated into the fabric filter's design to combat these harsh flue gas conditions

Corrosion control is accomplished by maintaining flue gas temperature above the dew point. Insulation specifications for fabric filters usually require a minimum of 4 inches with double lapping on side panels and with insulation extending into the hopper. Air in-leakage is minimized by good quality control during construction and by minimizing the number of openings from the outside into the filter. Heating prevents cold spots in the hopper and maintains the flowability of the collected particulate matter. Some fabric filter designs also use an acid resistant coating on internal components that come into contact with flue gas.

When fabric filters are integrated into an acid gas control system, the fabric filter acts as a reactor to aid in acid gas absorption, especially for sulfur dioxide. Sulfur dioxide is absorbed by the alkaline

material found in the filter cake collected on the bags. Therefore the effectiveness of sulfur dioxide absorption on a filter bag is reduced after the bag is cleaned. Overall sulfur dioxide absorption can be increased by reducing the number of filter bags that are cleaned simultaneously.

*Wet Scrubbers*

Wet scrubbers are usually used as part of a two-stage particulate and acid gas cleaning system downstream of an ESP. Although in smaller MWCs, a wet scrubber may be the primary means of particulate control. The wet scrubber removes particles passing through the ESP and serves as the primary acid gas control mechanism. A venturi scrubber followed by a packed or tray tower absorber is the most common, but other types of scrubbers are also used. Figure 4 shows a typical two-stage wet scrubber system flow diagram.

Usually water is recycled in the venturi stage to achieve particulate removal. Some hydrogen chloride removal will take place here also. Additional removal of particulate and acid gases will take place in the second scrubbing stage including the absorption of sulfur dioxide. Typical wet scrubber design parameters for MWC application are shown in Table 8.

The venturi section is subjected to severe corrosive conditions from the low pH of the recirculated solution. The scrubber inlet temperatures are normally high enough to require high alloy steel for

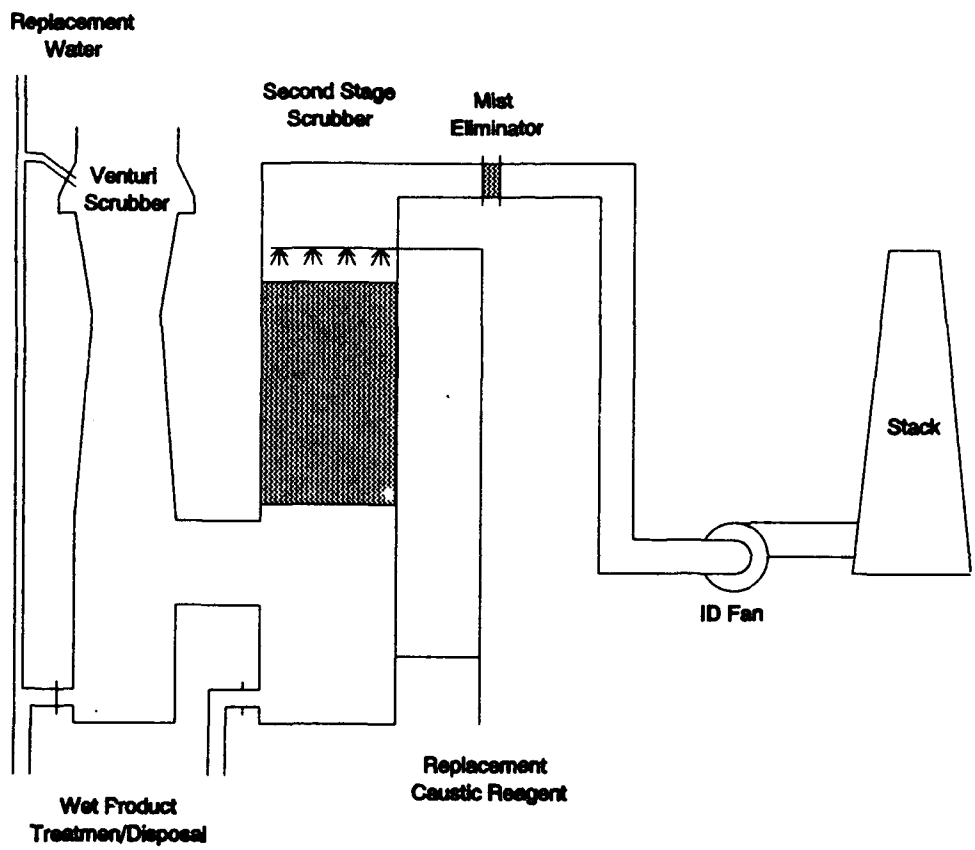


**Figure 4. Two-stage Wet Scrubber Flow Diagram.**

**Table 8**

**Wet Scrubber Design Parameters**

| | Venturi Stage | Absorber Stage |
|---|---|---|
| Gas velocity, ft/s | 90-150 | 6-10 |
| Pressure drop, in. w.g. | 40-70 | 4-8 |
| Liquid/gas ratio, gal/Kacfm | 10-20 | 20-40 |
| Scrubbing media | Water | Caustic |
| Solution pH | < 1-2 | 6.5-9 |
| Materials of Construction | High-alloy steel (e.g., Inconel, Hastelloy) | Fiberglass reinforced plastic, Lined carbon steel |

construction. The absorber stage may be a packed tower, tray tower, or radial flow tower. The absorber section is usually constructed of fiberglass reinforced plastic although carbon steel vessels lined with corrosion resistant materials are also used.

## Acid Gas Controls

Acid gas emissions from MWCs (HCl, $SO_2$, $SO_3$, and HF) are normally controlled by dry sorbent injection, spray dryer absorption, or wet scrubbing. Usually HCl control is of greater concern than control of other acid gases. However, $SO_2$ is more difficult to control and is present at much lower concentrations than HCl. All three of these technologies have been successfully applied to MWCs. The greater control capability of spray dryer and wet scrubbing systems have made these systems more popular in the face of stricter regulations and permit conditions.

### *Dry Sorbent Injection*

In the dry sorbent injection (DSI) process, a dry alkaline material is introduced into the gas stream to react with the acid gases. The alkaline material, usually hydrated lime [$CA(OH)_2$] or soda ash [$NA_2(CO_3)$] react with the acid gases to form salts that can be collected in the particulate control device. This simple process is capable of reducing HCl emissions by 90 percent and $SO_2$ emissions by about 50 percent. However, the dry alkaline material requirements are twice that of the improved DSI processes explained below. The stoichiometric ratios (the amount of sorbent added compared to the amount of sorbent theoretically required for complete acid gas removal) are typically between 2 and 4.

Acid gas control efficiency and reagent consumption can both be improved in DSI systems by increasing the flue gas relative humidity and recycling reacted sorbent material back into the gas stream.

The relative humidity of the flue gas can be increased by using a heat exchanger and by quench towers that use water sprays. Both methods are used, but humidification through quench towers predominates. Figure 5 presents a flow diagram for a DSI system using flue gas humidification. Retention times within humidification devices typically are 3 to 5 seconds. If a water spray is used, the

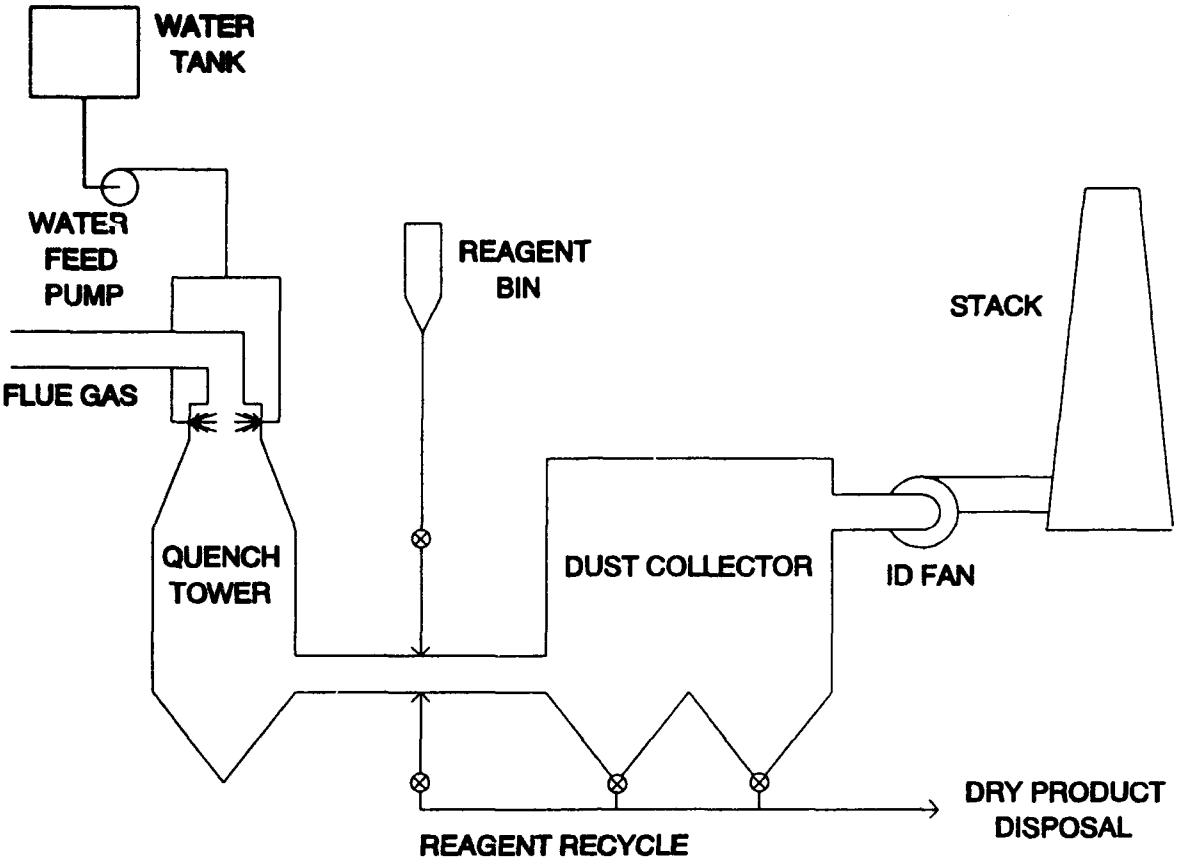


**Figure 5. Dry Sorbent Injection Process Flow Diagram.**

flue gas temperature leaving the cooling tower is maintained at a temperature high enough to evaporate all water droplets (300 to 350 °F).

Dry sorbent material is mixed with the flue gas after it is cooled. The sorbent reacts with acid gases to form a solid salt that is collected downstream in the particulate control device. Usually fabric filters are used to collect particulate since the reaction between the acid gases and the sorbent can continue on the filter cake surface. Frequently, a part of the collected reaction product is recycled back to the flue gas stream to improve removal efficiency and reduce the sorbent consumption rate. The DSI systems improved through humidification and recycling of reacted materials can achieve greater than 95 percent removal of HCl and 90 percent removal of $SO_2$ at stoichiometric ratios between 1 and 2.

*Spray Dryer Absorption*

Spray dryer absorption (SDA) has been widely used for MWC acid gas control. In fact, it is considered the best available control technology (BACT) for many MWC air permits. The SDA process combines a spray dryer with a particulate control device. In the spray dryer, flue gas humidification and some acid gas absorption occurs. In the particulate control device, additional acid gas absorption and the collection of fly ash/sorbent particulate matter takes place. The SDA process is capable of high removal efficiencies for all acid gases. The process is also capable of removing some heavy metals and organic compounds. The SDA process typically operates at stoichiometric ratios between 1 and 1.8. Figure 6 is a flow diagram for the SDA process.

MWC flue gas enters the spray dryer reactor where fine droplets of the sorbent/water slurry (usually hydrated lime) is sprayed into the flue gas stream. The reactor is designed to provide sufficient mixing

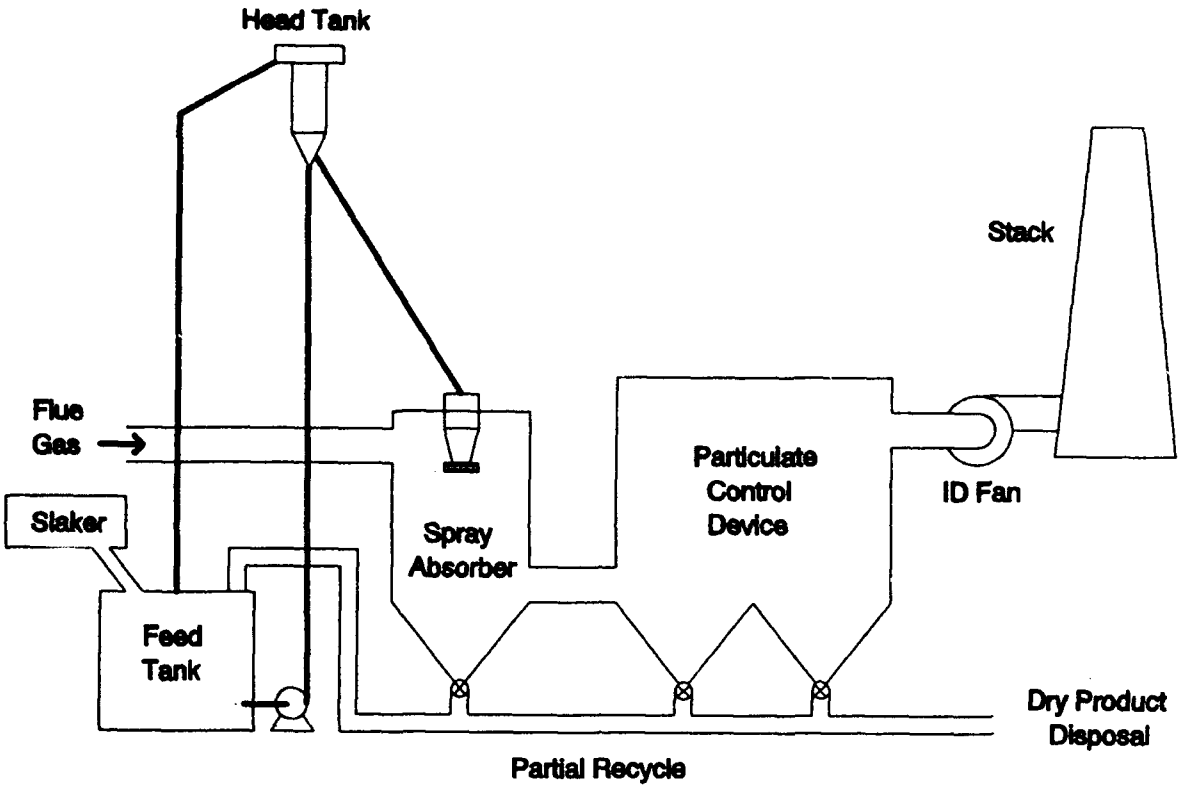


**Figure 6. Spray Dryer Absorption Flow Diagram.**

and retention time so that the sorbent/water slurry particles are dried completely before exiting. The evaporation of the slurry increases the humidity of the flue gas and reduces its temperature. Flue gasretention times range from 10 to 18 seconds and flue gas temperatures leaving the spray dryer range from 230 to 300 °F.

A large variety of spray dryer reactor designs are used in MWC applications. Spraying devices include: single rotary, multiple rotary, and multiple dual fluid nozzle atomization. The reactors may have single or multiple flue gas inlets and have upflow, downflow, or upflow with cyclonic precollection designs. In some systems, a portion of the dried sorbent particles and fly ash is collected in the bottom of the spray dryer. In other systems, all particulate matter is carried to the particulate control device. Material collected in the spray dryer is often recycled back into the system to reduce sorbent consumption.

The particulate control device downstream of the spray dryer may be an ESP, a reverse-air baghouse, or a pulse-jet baghouse. The type of particulate control device selected depends on the degree of particulate and acid gas control required, the available space, and the overall economics. Generally, a system requiring high acid gas removal efficiencies (greater than 95 percent HCl and greater than 85 percent $SO_2$) will use a baghouse because of its higher acid gas absorption capabilities. All particulate control devices must minimize heat loss to avoid the severe corrosion associated with the condensation of acid gases.

The end product of the SDA process is a fine hygroscopic material with a significant soluble fraction. The calcium chloride formed during the absorption of HCl in the spray dryer is a mixture of mono- and dihydrate forms ($CaCl_2$–$H_2O$, $CaCl_2$–$2H_2O$). At lower temperatures, the $CaCl_2$ will absorb moisture until it reaches the hexahydrate form ($CaCl_2$–$6H_2O$) and melts. Therefore, the design of the product conveying and storage systems must not expose the reacted sorbent to cool or moist air to maintain product flowability.

*Wet Scrubbing*

Wet scrubbing systems are capable of achieving high acid gas removal and have been applied to a large number of MWCs in Europe. Typical wet scrubber systems consist of a two-stage scrubber downstream of an ESP. The first stage uses water to remove the bulk of the HCl; the second stage uses hydrated lime to remove most of the $SO_2$. Figure 4 shows a typical wet scrubbing system flow diagram.

In some systems the acidic scrubbing liquid from the first scrubber stage is pumped into a fly ash leaching tank to remove heavy metals found in the fly ash collected from the particulate control device. After leaching, the fly ash may be usable for construction applications or disposed of in a landfill. The acidic stream leaving the leaching tank contains heavy metals. This stream may be treated with the caustic scrubbing liquid from the second scrubber stage to neutralize and precipitate the heavy metals.

Wet scrubbers have relatively low capital costs, high acid gas removal rates, they can remove other trace pollutants, and they require the lowest stoichiometric ratio of reagent material. However wet scrubbers produce a wet effluent that must be treated, they have a higher overall cost (capital plus operation and maintenance) than other alternatives, and they are more susceptible to corrosion problems.

**Heavy Metals Control**

Heavy metals typically are collected either by particulate control devices or by the acid gas control system. A large fraction of heavy metal emissions exit MWCs as solid particles and are collected as particulate matter. Most other metal species that exist in the vapor phase exiting a MWC are condensed onto particulate matter during the cooling of the flue gas that occurs in the air pollution control system. Since SDA and wet scrubber systems cool flue gases, they are also effective for controlling heavy metal emissions.

The cloud of finely atomized droplets found in a SDA reactor will serve as condensation or absorption sites for metals. The condensed metals will then be removed in the downstream particulate control device. Collection efficiencies for cadmium, lead, and arsenic for MWC systems with SDA acid gas control typically are greater than 90 percent.

Mercury is an especially difficult metal to control because of the volatility of some mercury species found in flue gas. Even at a temperature of 250 °F at the spray dryer absorption system outlet, a significant amount of mercury remains in the vapor phase. If mercury emissions are a problem, adding small amounts of activated carbon or sodium sulfide upstream of the SDA reactor can improve mercury control. Total mercury reductions of around 90 percent have been achieved using these additives (Brna 1991).

**PCDD/PCDF Controls**

PCDD/PCDF emissions can be controlled through a combination of good combustion practices, acid gas controls, and particulate controls. Combustion temperatures above 1800 °F for more than 2 seconds is considered adequate for destroying PCDDs/PCDFs found in the MSW stream and for destroying their precursors formed during the combustion of other organics in combination with compounds containing chlorine. However, some PCDDs/PCDFs may be formed downstream of the combustor on the surface of fly ash at lower temperatures (500 to 700 °F).

## Fuel Cleaning

"Fuel cleaning" is the practice of removing certain constituents from the MSW stream to reduce air pollutant emissions. For certain fractions of the MSW, such as lead-acid batteries, the correlation between MSW component and air emissions is well known; these components are routinely removed from the MSW stream before combustion. However, the situation is not as clear for other MSW components. A case could be made that virtually all components of MSW contribute to air emissions. Components such as paper, plastic, and yard waste add to the fuel value of MSW and make combustion processes for MSW more economically feasible. Also, reduction of certain waste components may actually increase emissions due to incomplete combustion or higher combustion temperatures.

The issue of fuel cleaning is very controversial. USEPA has recently ruled that separation of certain municipal wastes (nitrogen-containing) must be evaluated as best available control technology (BACT) for preconstruction permits applicable to new MWC facilities (Levin 1992). The ruling dealt only with limiting yard waste and other nitrogen-containing waste to prevent $NO_x$ formation. However, the ruling could set a precedent for banning other MSW components. If this ruling is interpreted broadly, there could be significant implications for future MWC facilities, including: permit delays for MWC siting, downsizing of planned MWC facilities, independent review of source separation and recycling requirements by air regulators, and difficulty in receiving financing since owners of MWC facilities cannot guarantee the material separation requirement will be fulfilled by the surrounding communities. In its broadest sense, this ruling attempts to inject pollution prevention into a single-medium statute. Fuel cleaning will certainly remain a hotly contested issue in the upcoming years.

# 6 SUMMARY

This report provided technical information about types of MWCs, environmental problems associated with MWC operation, regulations that apply to siting and operating MWCs, and the technologies capable of controlling these environmental problems. The information should be used by installations, The Environmental Branch at Major Commands, and Corps of Engineers Districts involved in planning, designing, siting, or operating MWC facilities.

This report detailed a number of environmental problems associated with MWC operation. MWCs emit $PM_{10}$, carbon monoxide, nitrogen oxides, toxic organics, acid gases, and heavy metals into the atmosphere. In addition, MWCs can produce solid waste (fly ash and reagent material used to treat acid gases) and liquid waste (wet scrubber absorbent) that may require further treatment.

Strict Federal regulations have been developed to minimize adverse environmental impacts from MWC operation. These regulations apply to new MWC facilities (NSPS) and existing MWC (Emission Guidelines). The CAA90 requires that the USEPA strengthen and broaden the scope of these regulations. These new Federal regulations may have a significant impact on future MSW management plans.

The strict environmental regulation of MWC facilities has led to the development of many air pollution control technologies. Good combustion practices can help control CO and organic emissions. A combination of combustion modifications and add-on control devices (SCR and SNCR) are used to control $NO_x$ emissions. Particulate matter control is achieved primarily with fabric filters or ESPs although wet scrubbers also achieve some control. Acid gas emissions are controlled by applying three absorption techniques: DSI, SDA, and wet scrubbing. Heavy metal and additional toxic organic emission control occurs through good particulate matter and acid gas control. Some supplementary control for mercury emissions may be required to meet tough mercury regulations. These technologies are expected to continue increasing in complexity and cost as MWC regulations become stricter.

## METRIC CONVERSION TABLE

$$1 \text{ ton} = 907.18 \text{ kg}$$
$$^{\circ}F = (^{\circ}C + 17.78) \times 1.8$$

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## APPENDIX: State and Local Regulatory Agencies

### ■ ALABAMA - STATE AGENCY

**Air Pollution Control**
Alabama Department of Environmental Management
1751 Congressman Williams L. Dickinson Drive
Montgomery, AL 36130
Telephone: (205) 271-7861
Alabama Environmental Management Commission (same address and phone as above)

**Waste Management**
Land Division Alabama Department of Environmental Management
1751 Congressman Williams L. Dickinson Drive
Montgomery, AL 36130
Telephone: (205) 271-7700
Environmental Management Commission (EMC) (same address and phone as above)

### BIRMINGHAM (See Jefferson County)

### CULLMAN COUNTY (See State Agency)

### HUNTSVILLE

**Air Pollution Control**
City of Huntsville
Natural Resources & Environmental Mgmt.
305 Church Street
Huntsville, AL 35801
Telephone: (202) 535-4206
Air Pollution Control Board (same address and phone as above)

### JEFFERSON COUNTY (Includes Birmingham)

**Air Pollution Control**
Jefferson County Department of Health
1400 Sixth Avenue South
Birmingham, AL 35233
Telephone: (205) 933-9110
Jefferson County Board of Health (same address and phone as above)

### LAWRENCE COUNTY (See State Agency)

### LIMESTONE COUNTY (See State Agency)

### MORGAN COUNTY (See State Agency)

### TRICOUNTY (See State Agency)

### ■ ALASKA - STATE AGENCY

**Air Pollution Control**
Alaska Department of Environmental Conservation
410 Willoughby Avenue
Room 105
Juneua, AL 99801-5100
Telephone: (907) 465-5100

**Waste Management**
Alaska Department of Environmental Conservation
410 Willoughby Avenue
Juneau, AK 99801
Telephone: (907) 465-5150
Fax: (907) 465-5164

### FAIRBANKS NORTH STAR BOROUGH

**Vehicle Inspection/Maintenance (I/M) Program**
Fairbanks North Star Borough
Air Quality Division
3175 Peger Rd
Fairbanks, AK 99701
Telephone: (907) 459-1325

**Waste Management**
Fairbanks North Star Borough
P.O. Box 71267
Fairbanks, AK 99707-1267
Telephone: (907) 459-1321
Pollution Control Commission (same address and phone as above)

### SOUTH CENTRAL CLEAN AIR AUTHORITY (Includes Anchorage Air Pollution Control Agency)

**Air Pollution Control**
Anchorage Air Pollution Control Agency
825 L Street
Anchorage, AK 99501
Telephone: (907) 343-4713
South Central Clean Air Authority (same address and phone as above)

## ■ ARIZONA - STATE AGENCY

**Air Pollution Control**
Office of Air Quality
Arizona Department of Environmental Quality
P.O. Box 600
Phoenix, AZ 85001-0600
Telephone: (602) 207-2308
Air Pollution Control Hearing Board (same address as above)

**Waste Management**
Office of Waste Programs
3033 North Central Ave.
Phoenix, AZ 85004
Telephone: (602) 207-2300

## MARICOPA COUNTY

**Air Pollution Control**
Maricopa County Air Pollution Control
2406 S. 24th Street
Suite E
Phoenix, AZ 85034
Telephone: (602) 506-6700
Fax: (602) 506-6862
Maricopa County Air Pollution Control Hearing Board (same address and phone as above)

## PIMA COUNTY

**Air Pollution Control**
Pima County Department of Environmental Quality
130 West Congress Street
3rd Floor
Tucson, AZ 85701-1317
Telephone: (602) 740-3340
Pima County Environmental Quality Advisory Council (same address and phone as above)

## PINAL-GILA COUNTIES

**Air Pollution Control**
Pinal County Air Quality Control District
P.O. Box 1076
Florence, AZ 85232
Telephone: (602) 868-6760
Fax: (602) 868-0225
Pinal County Air Quality Control Advisory Council
P.O. Box 8
Hayden, AZ 85235

## ■ ARKANSAS - STATE AGENCY

**Air Pollution Control**
Arkansas Department of Pollution Control and Ecology
8001 National Drive
Little Rock, AR 72209
Telephone: (501) 562-7444
Arkansas Commission on Pollution Control and Ecology (same address and phone as above)

**Waste Management**
Arkansas Department of Pollution Control and Ecology,
Hazardous Waste Management Division
8001 National Drive
Little Rock, AR 72209
Telephone: (501) 570-2872

## ■ CALIFORNIA - STATE AGENCY

**Air Pollution Control**
California Air Resources Board
1102 Q Street
Sacramento, CA 95814
Telephone: (916) 322-2990

**Waste Management**
Department of Toxic Substances Control
400 P Street
4th Floor
P.O. Box 806
Sacramento, CA 95812-0806
Telephone: (916) 323-6042

## ALAMEDA COUNTY (See Bay Area)

## ALPINE COUNTY (See Great Basin Valley)

## AMADOR COUNTY

**Air Pollution Control**
Amador County Air Pollution Control District
108 Court Street
Jackson, CA 95642
Telephone: (209) 223-6406

**Waste Management**
Amador County Health Department
Environmental Health Division
108 Court Street
Jackson, CA 95642
Telephone: (209) 223-6439
Board of Supervisors (same address and phone as above)

**(California Continued)**

**BAY AREA (Includes Counties of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Sonoma and Solano)**
**Air Pollution Control**
Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109
Telephone: (415) 771-6000
Fax: (415) 928-8560
Bay Area Air Quality Management District Board of Directors (same address and phone as above)

**BUTTE COUNTY**
**Air Pollution Control**
Butte County Air Pollution Control District
9287 Midway
Suite 1A
Durham, CA 95938
Telephone: (916) 891-2882
Butte County Board of Supervisors
25 County Center Drive
Oroville, CA 95965
Telephone: (916) 538-7643

**CALAVERAS COUNTY**
**Air Pollution Control**
Calaveras County Health Department
Government Center
San Andreas, CA 95249
Telephone: (209) 754-6399
Calaveras County Board of Supervisors (same address as above) Telephone: (209) 754-6400

**COLUSA COUNTY**
**Air Pollution Control**
Colusa County Air Pollution Control District
100 Sunrise Blvd
Suite F
Colusa, CA 95932
Telephone: (916) 458-5891
Colusa County Board of Supervisors
546 Jay Street
Colusa, CA 95932
Telephone: (916) 458-2101

**CONTRA COSTA COUNTY (See Bay Area)**

**DEL NORTE COUNTY (See North Coast Unified)**

**EL DORADO COUNTY**
**Air Pollution Control**
El Dorado County Air Pollution Control District
2850 Fairland Court
Placerville, CA 95667
Telephone: (916) 621-6662
El Dorado County Air Pollution Control Board
330 Fair Lane
Placerville, CA 95667

**FRESNO COUNTY**
**Air Pollution Control**
Fresno County Air Pollution Control District
1221 Fulton Mall
Fresno, CA 93721
Telephone: (209) 445-3239
Fresno County Board of Supervisors
2281 Tulare Street
Fresno, CA 93721

**GLENN COUNTY**
**Air Pollution Control**
Glenn County Air Pollution Control District
720 North Colusa Street
Willows, CA 95988
Telephone: (916) 934-6500
Glenn County Air Pollution Control board
526 W. Sycamore Street
Willows, CA 95988

**GREAT BASIN VALLEY (Includes Counties of Alpine, Inyo and Mono)**
**Air Pollution Control**
Great Basin Unified Air Pollution Control District
157 Short Street
Suite 6
Bishop, CA 93514
Telephone: (619) 872-8211
Great Basin Unified Air Pollution Control Board
P.O. Box 43
Mammoth Lakes, CA 93546

**HUMBOLDT COUNTY (See North Coast Unified)**

(California Continued)

## IMPERIAL COUNTY

### Air Pollution Control

Imperial County Air Pollution Control District
150 South Ninth Street
El Centro, CA 92243-2801
Telephone: (619) 339-4606
Air Pollution Control Board
Imperial County Board of Supervisors
940 W. Main Street
El Centro, CA 92243

## INYO COUNTY (See Great Basin Valley)

## KERN COUNTY

### Air Pollution Control

Kern County Air Pollution Control District
2700 M Street
Suite 290
Bakersfield, CA 93301
Telephone: (805) 861-2593
Kern County Air Pollution Control Board
1115 Truxton Avenue
Bakersfield, CA 93301

### Waste Management

Kings County Health Department
330 Campus Drive
Hanford, CA 93230
Telephone: (209) 584-1411
Kings County Board of Supervisors
Kings County Government Center
1400 W. Lacey Blvd.
Hanford, CA 93230

## LAKE COUNTY

### Air Pollution Control

Lake County Air Quality Management District
883 Lakeport Blvd.
Lakeport, CA 95453
Telephone: (707) 263-7000
Lake County Board of Supervisors
255 North Forbes
Lakeport, CA 95453

## LASSEN COUNTY

### Air Pollution Control

Lassen County Air Pollution Control District
175 Russell Avenue
Susanvile, CA 96130
Telephone: (916) 257-8311 ext. 110
Lassen County Air Pollution Hearing Board
707 Nevada Street
Susanville, CA 96130

## LOS ANGELES COUNTY (See South Coast AQMD)

### Waste Management

Environmental Health
135 W. Yosemite Avenue
Madera, CA 93637
Telephone: (209) 675-7823
Madera County Board of Supervisors
209 W. Yosemite Avenue
Madera, CA 93637

## MARIN COUNTY (See Bay Area)

## MARIPOSA COUNTY

### Air Pollution Control

Mariposa County Health Department
P.O. Box 5
Mariposa, CA 95338
Telephone: (209) 966-3689
Mariposa County Board of Supervisors
P.O. Box 247
Mariposa, CA 95338

## MENDOCINO COUNTY

### Air Pollution Control District

Mendocino County Air Quality Management District
306 E. Gobbi Street
Ukiah, CA 95482
Telephone: (707) 463-4354
Fax: (707) 463-5707
Air Quality District Board
Courthouse Square
Ukiah, CA 95482
Telephone: (707) 463-4354

## MERCED COUNTY

### Air Pollution Control

Merced County Air Pollution Control District
385 E. 13th Street
Merced, CA 95340
Telephone: (209) 385-7391
Merced County Air Pollution Control Board
2222 M Street
Merced, CA 95340

## MODOC COUNTY

### Air Pollution Control

Modoc County Air Pollution Control District
202 W. Fourth Street
Alturas, CA 96101
Telephone: (916) 233-6401
Modoc County Air Pollution Control Board (same address and phone as above)

**(California Continued)**
**MONO COUNTY (See Great Basin Valley)**

**MONTEREY BAY UNIFIED (Includes Counties of Monterey, Santa Cruz and San Benito)**
**Air Pollution Control**
Monterey Bay Unified Air Pollution Control District
24580 Silver Cloud Court
Monterey, CA 93940
Telephone: (408) 647-9411
Monterey Bay Unified Air Pollution Control District Board (same address and phone as above)

**NAPA COUNTY (See Bay Area)**

**NEVADA COUNTY**
**Air Pollution Control**
Northern Sierra Air Quality Management District
1300 E. Main Street
P.O. Box 2509
Grass Valley, CA 95945
Telephone: (916) 265-1398
Fax: (916) 265-1264
Northern Sierra Air Quality Management District Board
P.O. Box 6100
Nevada City, CA 95959

**NORTH COAST UNIFED (Includes Del Norte, Humboldt, and Trinity Counties)**
**Air Pollution Control**
North Coast Unified Air Quality Management District
2389 Myrtle Avenue
Eureka, CA 95501
Telephone: (707) 443-3093
North Coast Air Quality Management District Board (same address and phone as above)

**NORTHERN SONOMA COUNTY**
**Air Pollution Control**
Northern Sonoma County Air Pollution Control District
109 North Street
Healdsburg, CA 95448
Telephone: (707) 433-5911/5742
Northern Sonoma County Air Pollution Control District Board of Directors
575 Administration Drive
Santa Rosa, CA 95401

**ORANGE COUNTY (See South Coast AQMD)**

**PLACER COUNTY**
**Air Pollution Control**
Placer County Air Pollution Control District
11464 B Avenue
Auburn, CA 95603
Telephone: (916) 889-7130
Placer County Board of Supervisors
175 Fulweiler Avenue
Auburn, CA 95603

**PLUMAS COUNTY (See Nevada County)**

**PLUMAS COUNTY**
**Waste Management**
Plumas County Environmental Health Department
P.O. Box 480
Quincy, CA 95971
Telephone: (916) 283-6355
Plumas County Board of Supervisors
P.O. Box 207
Quincy, CA 95971

**RIVERSIDE COUNTY (See South Coast AQMD)**

**SACRAMENTO COUNTY**
**Air Pollution Control**
Sacramento Metropolitan Air Quality Management District
A Division of Sacramento County Environmental Management Department
8411 Jackson Road
Sacramento, CA 95826
Telephone: (916) 386-6650
SMAQMD Board of Directors
700 H Street
Sacramento, CA 95814

**SAN BENITO COUNTY (See Monterey Bay Unified)**

**SAN BERNARDINO COUNTY**
**Air Pollution Control**
San Bernardino County Air Pollution Control District
15428 Civic Drive
Victorville, CA 92392
Telephone: (619) 243-8920
San Bernardino County Air Pollution Control Board
385 N. Arrowhead Avenue
Fifth Floor
San Bernardino, CA 92415-0110
Telephone: (909) 387-4811

(California Continued)

**SAN DIEGO COUNTY**

**Air Pollution Control**

San Diego County Air Pollution Control District
9150 Chesapeake Drive
San Diego, CA 92123-1096
Telephone: (619) 694-3307
Air Pollution Control Board
County Administration Center
1600 Pacific Highway
San Diego, CA 92101

**Waste Management**

Department of Health Services
Environmental Health Services
County of San Diego
P.O. Box 85261
San Diego, CA 92186-5261
Telephone: (619) 338-2211

**SAN FRANCISCO COUNTY (See Bay Area)**

**SAN JOAQUIN COUNTY**

**Air Pollution Control**

San Joaquin Valley Unified Air Pollution Control District
1999 Tuolumne Street
Suite 200
Fresno, CA 93721
Telephone: (209) 497-1000
Governing Board (same address and phone as above)

**SAN LUIS OBISPO COUNTY**

**Air Pollution Control**

San Luis Obispo County Air Pollution Control District
2156 Sierra Way
Suite B
San Luis Obispo, CA 93401
Telephone: (805) 781-5912
Air Pollution Control Board
County Government Center
San Luis Obispo, CA 93408

**SAN MATEO COUNTY (See Bay Area)**

**SANTA BARBARA COUNTY**

Air Pollution Control District
Santa Barbara County Air Pollution Control District
26 Castilian Drive B-23
Goleta, CA 93117
Telephone: (805) 961-8800
Air Pollution Control District
Board of Directors (Board of Supervisors)
105 E. Anapamu
Santa Barbara, CA 93101

**SANTA CLARA COUNTY (See Bay Area)**

**SANTA CRUZ COUNTY (See Monterey Bay Unified)**

**SHASTA COUNTY**

**Air Pollution Control**

Shasta County Air Quality Management District
1415 West Street
Redding, CA 96001
Telephone: (916) 225-5674
Air Pollution Control Board
P.O. Box 8000
Redding, CA 96099

**NORTHERN SIERRA AIR QUALITY MANAGEMENT DISTRICT (Sierra, Nevada, and Plumas Counties)**

Northern Sierra Air Quality Management
P.O. Box 2509
Grass Valley, CA 95945
Telephone: (916) 265-1398
Northern Sierra Air Quality Management District Board
(same as address and phone as above)

**SISKIYOU COUNTY**

**Air Pollution Control**

Siskiyou County Air Pollution Control District
525 S. Foothill Drive
Yreka, CA 96097
Telephone: (916) 842-8029
Siskiyou County Air Pollution Control Board
Courthouse
Yreka, CA 96097

**SOLANO COUNTY (See Bay Area, Yolo-Solano)**

**(California Continued)**

**SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (Includes Los Angeles, Orange, San Bernardino (non-desert) and Riverside Counties)**

**Air Pollution Control**

South Coast Air Quality Management District
21865 E. Copley Drive
Diamond Bar, CA 91765
Telephone: (909) 396-2001
South Coast Air Quality Management District Governing Board (same address and phone as above)

**STANISLAUS COUNTY**

**Air Pollution Control**

Stanislaus County Air Pollution Control District
1716 Morgan Road
Modesto, CA 95351
Telephone: (209) 525-4152
Stanislaus County Air Pollution Control Board
1100 H Street
Modesto, CA 95354

**SUTTER COUNTY & YUBA COUNTY**

**Air Pollution Control**

Feather River Air Quality Management District
463 Palora Avenue
Yuba City, CA 95991
Telephone: (916) 634-7659
Feather River Air Quality Management District Board
215 5th Street
Marysville, CA 95901

**Waste Management**

Sutter County Underground Tank Storage Program
142 Garden Highway
Yuba City, CA 95991
Telephone: (916) 741-7500
Sutter County Board of Supervisors
1160 Civic Center Blvd.
Yuba City, CA 95993

**TEHAMA COUNTY**

**Air Pollution Control**

Tehama County Air Pollution Control District
1760 Walnut Street
P.O. Box 38
Red Bluff, CA 96080
Telephone: (916) 527-3717
Tehama County Air Pollution Control Board
P.O. Box 250
Red Bluff, CA 96080

**TRINITY COUNTY (See North Coast Unified)**

**TULARE COUNTY**

**Air Pollution Control**

Tulare County Air Pollution Control District
County Civic Center
Visalia, CA 93291
Telephone: (209) 733-6441
Tulare County Air Pollution Control District Board
Administration Building
County Civic Center
2800 West Burrell
Visalia, CA 93291

**TUOLUMNE COUNTY**

**Air Pollution Control**

Tuolumne County Air Pollution Control District
2 South Green Street
Sonora, CA 95730
Telephone: (209) 533-5693
Tuolumne County Air Pollution Control Board

**VENTURA COUNTY**

**Air Pollution Control**

Ventura County Air Pollution Control District
702 County Square Drive
Ventura, CA 93003
Telephone: (805) 645-1400
Ventura County Air Pollution Control Board (Board of Supervisors)

**YOLO-SOLANO**

**Air Pollution Control**

Yolo-Solano Air Pollution Control District
1947 Galileo Court
Suite 103
Davis, Ca 95616
Telephone: (916) 757-3650
Yolo-Solano Air Pollution Control District Board (same address and phone as above)

## ■ COLORADO STATE AGENCY

**Air Pollution Control**

Colorado Department of Health Air Pollution Control Division
4210 E. 11th Avenue
Denver, CO 80220
Telephone: (303) 331-8500
Colorado Air Quality Control Commission (same address and phone as above)

**(Colorado Continued)**
**Waste Management**
Hazardous Materials and Waste Management Division
Colorado Department of Health
4300 Cherry Creek Drive South
Denver, CO 80222
Telephone: (303) 692-3300

**BOULDER COUNTY**
**Air Pollution Control**
Boulder County Health Department
3450 Broadway
Boulder, CO 80304
Telephone: (303) 441-1180
Boulder County Board of Health (same address and phone as above)

**COLORADO SPRINGS (See El Paso County)**

**DENVER CITY-COUNTY**
**Air Pollution Control**
Denver Environmental Health Service
605 Bannock Street
Room 333
Denver, CO 80207
Telephone: (303) 436-7305
Fax: (303) 436-5074
Denver Board of Health and Hospitals
17777 S. Harrison St. #909
Denver, CO 80210

**EL PASO COUNTY (Includes Colorado Springs)**
**Air Pollution Control**
El Paso County Department of Health and Environment
301 S. Union Blvd.
Colorado Springs, CO 80910
Telephone: (719) 578-3139
El Paso County Department of Health and Environment (same address and phone as above)

**Waste Management**
El Paso County Sheriff's Special Operations
15 East Cucharras
Colorado Springs, CO 80903
Telephone: (719) 520-7125
El Paso County Board of County commissioners
27 E. Vermijo
Colorado Springs, CO 80903

**JEFFERSON COUNTY**
**Air Pollution Control**
Jefferson County Department of Health & Environment
260 S. Kipling
Lakewood, CO 80212
Telephone: (303) 232-6301
Fax: (303) 239-7076
Jefferson County Board of Health (same address and phone as above)

**LARIMER COUNTY**
**Air Pollution Control**
Larimer County Health and Environment department
1525 Blue Spruce Dr.
Fort Collins, CO 80525
Telephone: (303) 498-6776
Fax: (303) 498-6772
Larimer County Board of Health and Environment (same address and phone as above)

**MESA COUNTY**
**Air Pollution Control**
Mesa County Health Department
515 Patterson Road
Grand Junction, CO 81506
Telephone: (303) 248-6960

**PUEBLO CITY-COUNTY**
**Air Pollution Control**
Pueblo City-County Health Department
151 Central Main Street
Pueblo, CO 81003-4297
Telephone: (719) 544-8376
Fax: (719) 545-9800

**Waste Management**
Pueblo City-County Health Department
151 Central Main
Pueblo, CO 81003-4297
Telephone: (303) 544-8376
Fax: (719) 545-9800
Pueblo City-County Health Department Board of Health (same address and phone as above)

**WELD COUNTY**
**Air Pollution Control**
Weld County Health Department
1517 16th Ct.
Greeley, CO 80631
Telephone: (303) 353-0635
Weld County Board of Commissioners
915 10th Street
Greeley, CO 80631

## ■ CONNECTICUT - STATE AGENCY

### Air Pollution Control

Bureau of Air Management
165 Capitol Avenue
Hartford, CT 06106
Telephone: (203) 566-2506

### Waste Management

Connecticut Department of Environmental Protection
Waste Management Bureau
165 Capitol Avenue
Hartford, CT 06106
Telephone: (203) 566-8476

## BRIDGEPORT

### Air Pollution Control

Department of Air Pollution Control
Bridgeport Office of Humane Affairs
752 E. Main Street
Bridgeport, CT 06608
Telephone: (203) 576-7474
Environmental Commission (same address and phone as above)

## BRISTOL-BURLINGTON

### Air Pollution Control

Bristol-Burlington Health Department
240 Stafford Avenue
Bristol, CT 06010-4617
Telephone: (203) 584-7682
District Board of Health (same address and phone as above)

## GREENWICH

### Air Pollution Control

Greenwich Department of Health
101 Field Pt Rd.
Greenwich, CT 06830
Telephone: (203) 622-7838
Board of Health (same address and phone as above except 7836)

## MERIDEN

### Air Pollution Control

City of Meriden
Department of Human Services
Division of Health
165 Miller Street
Meriden, CT 06450-4283
Telephone: (203) 630-4226

## NEW HAVEN

### Air Pollution Control

New Haven Health Department
One State Street
New Haven, CT 06511
Telephone: (203) 787-8173
Board of Health, City of New Haven

## NORWALK

### Air Pollution Control

Department of Health
137 East Avenue
Norwalk, CT 06851
Telephone: (203) 854-7821
Board of Health (same address and phone as above)

## STAMFORD

### Air Pollution Control

Stamford Health Department
229 North Street
Stamford, CT 06902
Telephone: (203) 358-4396
Stamford Health Commission (same address and phone as above)

## ■ DELAWARE - STATE AGENCY

### Air Pollution Control

Department of Natural Resources and Environmental Control
Division of Air and Waste Management
89 Kings Highway
Richardson and Robbins Building
Dover, DE 19903
Telephone: (302) 739-4791
Cabinet Secretary of the Dept. (same address and phone as above)

### Waste Management

Delaware Department of Natural Resources and Environmental Control
Hazardous Waste Management Branch
89 Kings Highway
P.O. Box 1401
Dover, DE 19903
Telephone: (302) 739-3689

## ■ DISTRICT OF COLUMBIA - STATE AGENCY

### Air Pollution Control

Air Resources Management Division
2100 Martin Luther King Ave, SE
Washington, DC 20020
Telephone: (202) 404-1180

**(District of Columbia Continued)**

**Waste Management**

Environmental Regulation Administration (ERA)
Pesticide, Hazardous Waste and Underground Storage Tank Division (PHW&USTD)
2100 Martin Luther King, Jr. Avenue, SE
Room 203
Washington, DC 20020
Telephone: (202) 404-1167
Pesticide, Hazardous Waste, and UST Division (same address and phone as above)

## ■ FLORIDA - STATE AGENCY

**Air Pollution Control**

The Florida Department of Environmental Regulation
2600 Blair Stone Road
Twin Towers Office Building
Tallahassee, FL 32399-2400
Telephone: (904) 488-0114
Environmental Regulation Commission (same address and phone as above)

**Waste Management**

Department of Environmental Regulation
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
Telephone: (904) 487-3299
Environmental Regulation Commission (same address and phone as above)

## ALACHUA COUNTY

**Waste Management**

Alachua County Office of Environmental Protection
1 SW 2nd Place
Gainesville, FL 32601
Telephone: (904) 336-2442
Alachua County Board of County Commissioners
P.O. Drawer CC
Gainesville, FL 32602

## BROWARD COUNTY

**Air Pollution Control**

Broward County Office of Natural Resource Protection
621 S. Andrews Avenue
Fort Lauderdale, FL 33301
Telephone: (305) 765-4436
Fax: (305) 765-4109
Broward County Board of Commissioner
115 South Andrews Avenue
Fort Lauderdale, FL 33301

**Waste Management**

Board of County Commissioners
115 S. Andrews Avenue
Room 421
Ft. Lauderdale, FL 33301
Telephone: (305) 357-7000

**Waste Management**

Department of Natural Resource Protection
500 E. Broward Blvd.
Fort Lauderdale, FL 33394
Telephone: (305) 765-5181
Broward County Board of Commissioner
Governmental Center
115 S. Andrews Avenue
Ft. Lauderdale, FL 33301

## DUVAL COUNTY (See Jacksonville)

## HILLSBOROUGH COUNTY

**Air Pollution Control**

Air Management Division/Environmental Protection Commission
1410 N. 21st Street
Tamapa, FL 33605
Telephone: (813) 272-5530
Environmental Protection Commission of Hillsborough County
P.O. Box 1101
Tampa, FL 33601

## JACKSONVILLE (Includes Duval County)

**Air Pollution Control**

Air Quality Division
City of Jacksonville
421 West Church St.
Suite 412
Jacksonville, FL 32202
Telephone: (904) 630-3666
Environmental Protection Board (same address and phone as above)

## MANATEE COUNTY

**Air Pollution Control**

Manatee County Environmental Action Commission (MCEAC)/Air Quality Program
202 6th Avenue, East
Bradenton, FL 34206
Telephone: (813) 742-5980
Environmental Action Commission of Manatee County (MCEAC)
P.O. Box 1000
Bradenton, FL 34208

## METROPOLITAN DADE COUNTY

### Air Pollution Control

Metropolitan Dade County Dept. of Environmental Resources Management
33 S.W. 2nd Avenue
Miami, FL 33130
Telephone: (305) 372-6666
Environmental Quality Control Board (same address and phone as above)

### Waste Management

Metro-Dade Department of Environmental Resources Management
111 NW First Street
Suite 1310
Miami, FL 33128-1971
Telephone: (305) 375-3376
Environmental Quality Control Board (same address and phone as above)

## ORANGE COUNTY (See Reedy Creek Improvement District)

## OSCEOLA COUNTY (See Reedy Creek Improvement District)

## PALM BEACH COUNTY

### Air Pollution Control

Palm Beach County Public Health Unit
901 Evernia Street
West Palm Beach, FL 33401
Telephone: (407) 355-3070
Palm Beach County Environmental Control Board
Government Complex
North Olive Street
West Palm Beach, FL 33401

### Waste Management

Palm Beach County Public Health
901 Evernia Street
West Palm Beach, FL 33401
Telephone: (407) 355-4535
Palm Beach County Environmental Control Board
Government Complex Building
N. Olive Street
West Palm Beach, FL 33401

## PINELLAS COUNTY

### Air Pollution Control

Pinellas County Department of Environmental Management
Air Quality Division
300 S. Garden Avenue
Clearwater, FL 34616
Telephone: (813) 462-4422
Fax: (813) 462-4422
Pinellas County Board of County Commissioners
315 Court Street
Clearwater, FL 34616

### Waste Management

Pinellas County Department of Environmental Management
315 Court Street
Clearwater, FL 34616
Telephone: (813) 462-4761
Pinellas County Board of County Commissioners (same address and phone as above)

## SARASOTA COUNTY

### Air Pollution Control

Sarasota County Air Quality Program
Natural Resources Department
1301 Cattlemen Road
Bldg. B
Sarasota, FL 34232-6299
Telephone: (813) 378-6137
Sarasota County Board of commissioners
P.O. Box 8
Sarasota, FL 34230

## ■ GEORGIA - STATE AGENCY

### Air Pollution Control

Georgia Air Protection Branch
4244 International Parkway
Suite 120
Atlanta, GA 30354
Telephone: (404) 363-7000
Fax: (404) 363-7100
Department of Natural Resources (same address and phone as above)

### Waste Management

Environmental Protection Division
Department of Natural Resources
Floyd Towers East
205 Butler Street SE
Atlanta, GA 30334
Telephone: (404) 656-2833
Board of Natural Resources (same address and phone as above)

## ■ HAWAII - STATE AGENCY

**Air Pollution Control**
Clean Air Branch
500 Ala Moana Blvd
Honolulu, HI 96813
Telephone: (808) 586-4200

**Waste Management**
Hawaii Department of Health
Environmental Management Division
5 Waterfront Plaza
Suite 250
500 Ala Moana Blvd
Honolulu, HI 96813
Telephone: (808) 586-4424

## ■ IDAHO - STATE AGENCY

**Air Pollution Control**
Idaho Department of Health and Welfare
Division of Environmental Quality
1410 N. Hilton Street
Boise, ID 83706
Telephone: (208) 334-0502
Board of Health and Welfare
450 W. State Street
Boise, ID 83720

**Waste Management**
Dept of Health & Welfare
Division of Environmental Quality
Planning & Program Development Bureau
1410 North Hilton Street
3rd Floor
Boise, ID 83706
Telephone: (208) 334-5879

## ■ ILLINOIS - STATE AGENCY

**Air Pollution Control**
Illinois Environmental Protection Agency
Division of Air Pollution Control
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276
Telephone: (217) 782-7326
Department of Energy and Natural Resources
325 W. Adams
Room 300
Springfield, IL 62704
Telephone: (217) 785-2800

**Waste Management**
Illinois Environmental Protection Agency
2200 Churchill Road
Springfield, IL 62706
Telephone: (217) 782-6760
Department of Energy and Natural Resources
Office of Solid Waste and Renewable Resources
325 W. Adams
Room 300
Springfield, IL 62704
Telephone: (217) 524-4545
Department of Energy and Natural Resources
hazardous Waste Research and Information Center
1808 Woodfield Drive
Savoy, IL 61874
Telephone: (217) 333-8941

## BEDFORD PARK

**Air Pollution Control**
Bedford Park Environmental Quality Control Board
6701 South Archer Road
Bedford Park, IL 60501
Telephone: (708) 458-2067
Bedford Park Environmental Quality Control Board
P.O. Box 128
Bedford Park, IL 60501

## BENSENVILLE

**Air Pollution Control**
Bensenville Pollution Control Agency
1253 Roosevelt Avenue
Glenview, IL 60025
Telephone: (708) 390-2610

## CHICAGO

**Air Pollution Control**
City of Chicago
Department of Environment
320 N. Clark Street
Room 600A
Chicago, IL 60610
Telephone: (312) 744-7606

**Waste Management (See Air Pollution Control above)**

**(Illinois Continued)**

**COOK COUNTY**

**Air Pollution Control**

Cook County Department of Environmental Control
Maybrook Civic Center
1500 Maybrook Drive
Maywood, IL 60153
Telephone: (708) 865-6165
Cook County Board of Commissioners
Room 537
County Building
118 N. Clark Street
Chicago, IL 60602

**DUPAGE COUNTY**

**Air Pollution Control**

DuPage County Health Department
111 North County Farm Road
Wheaton, IL 60187
Telephone: (708) 682-7400

**Waste Management**

DuPage County Health Department
111 North County Farm Road
Wheaton, IL 60187
Telephone: (312) 682-7400
DuPage County Board of Health (same address and phone as above)

**EVANSTON**

**Air Pollution Control**

City of Evanston Department of Building and Property Services
2100 Ridge Avenue
Evanston, IL 60201
Telephone: (312) 328-2100
Evanston Environmental Control Board (same address and phone as above)

**MCCOOK**

**Air Pollution Control**

Village of McCook Environmental Board
50th and Glencoe Avenue
McCook, IL 60525
Telephone: (312) 447-1231

## ■ INDIANA - STATE AGENCY

**Office of Solid & Hazardous Waste Management**

Indiana Dept. of Environmental Management
105 S. Merdian Street
P.O. Box 6015
Indianapolis, IN 46206-6015
Telephone: (317) 232-3210
Air Pollution Control Board (same address as above)

**Waste Management**

Office of Solid and Hazardous Waste/Indiana Dept. of Environmental Management
105 South Meridan Street
Indianapolis, IN 46225
Telephone: (317) 232-3210
Solid waste Management Board (same address and phone as above)

**ANDERSON**

**Office of Air Management**

Office of Air Management
P.O. Box 2100
Anderson, IN 46018
Telephone: (317) 646-9835
Fax: (317) 646-9657
Air Management Board (same address and phone as above)

**EAST CHICAGO**

**Air Pollution Control**

Department of Air Quality Control
4525 Indianapolis Blvd.
East Chicago, IN 46312
Telephone: (219) 391-8297

**EVANSVILLE**

**Air Pollution Control**

Evansville Protection Agency
1 N.W. M.L. King Blvd.
Civic Center Room 207
Evansville, IN 47708
Telephone: (812) 426-5597
Environmental Protection Agency Board (same address and phone as above)

**GARY**

**Air Pollution Control**

Gary Air Pollution Control
846 Broadway Second Floor
Gary, IN 46402
Telephone: (219) 882-3000

(Indiana Continued)

**HAMMOND**

**Air Pollution Control**
Hammond Air Pollution Control
5925 Calumet Avenue
Hammond, IN 46320
Telephone: (219) 853-6306
Air Pollution Control Board (same address and phone as above)

**INDIANAPOLIS**

**Air Pollution Control**
Air Pollution Control Division
2700 South Belmont Avenue
Indianapolis, IN 46221-2097
Telephone: (317) 327-2264
Indianapolis Air Pollution Control Board (same address and phone as above)

**LAKE COUNTY**

**Air Pollution Control**
Lake County Air Pollution Control
2293 N Main Street
Crown Point, IN 46307
Telephone: (219) 755-3655
Lake County Board of Heath (same address and phone as above)

**ST. JOSEPH COUNTY**

**Air Pollution Control**
St. Joseph County Air Pollution Control
County City Bldg
8th & 9th Floors
South Bend, IN 46601
Telephone: (219) 235-9775
St. Joseph County Board of Health (same address and phone as above)

**VIGO COUNTY**

**Air Pollution Control**
Vigo County Air Pollution Control
201 Cherry Street
Terre Haute, IN 47807
Telephone: (812) 462-3433
Fax: (812) 235-7558
Vigo County Air Pollution Control Board (same address and phone as above)

## ■ IOWA - STATE AGENCY

**Air Pollution Control**
Iowa Department of Natural Resources
Henry A. Wallace Building
Des Moines, IA 50319
Telephone: (515) 281-5145
Environmental Protection Commission (same address and phone as above)

**Waste Management**
Iowa Department of Natural Resources
Henry A. Wallace Building
Des Moines, IA 50319
Telephone: (515) 281-5145
Environmental Protection commission (same address and phone as above)

**CEDAR RAPIDS-LINN COUNTY**

**Air Pollution Control**
Linn County Health Department
501 13th Street, NW
Cedar Rapids, IA 52405-3700
Telephone: (319) 398-3551
Linn County Board of Health (same address as above)

**POLK COUNTY**

**Air Pollution Control**
Polk County Public Works
1530 N.E. 58 Ave.
Des Moines, IA 50313
Telephone: (515) 286-3351
Polk County Board of Supervisors/Health
2nd & Court Avenue
Des Moines, IA 50309

## ■ KANSAS - STATE AGENCY

Bureau of Air and Radiation
Forbes Field
Building 740
Topeka, KS 66620
Telephone: (913) 296-1600; (913) 296-6247

**Waste Management**
Bureau of Air and Radiation
Forbes Field
Building 740
Topeka, KS 66620
Telephone: (913) 296-1600; (913) 296-6247

**(Kansas Continued)**

**KANSAS CITY-WYANDOTTE COUNTY**
**Air Quality Division**
Wyandotte County Health Department
619 Ann Avenue
Kansas City, KS 66101
Telephone: (913) 573-6700
Wyandotte County Board of Commissioner
KCK Courthouse
710 N. 7th St.
Kansas City, KS 66101

**SEDGWICK COUNTY (See Wichita-Sedgwick County)**

**TOPEKA-SHAWNEE COUNTY**
**Air Pollution Control**
Topeka-Shawnee County Health Agency
1615 W. Eighth Street
Topeka, KS 66606
Telephone: (913) 233-8961
Topeka City Council
Shawnee County Commission
City Building
215 E. Seventh Street
Topeka, KS 66606

**WICHITA-SEDGWICK COUNTY**
**Air Pollution Control**
Wichita-Sedgwick County Department of Community Health
1900 E. 9th Street
Wichita, KS 67214
Telephone: (316) 268-8351
Wichita-Sedgwick County Board of Health (same address as above)

**WYANDOTTE COUNTY (See Kansas City-Wyandotte County)**

**■ KENTUCKY - STATE AGENCY**
**Air Pollution Control**
Division for Air Quality
Department for Environmental Protection
316 St. Clair Mall
Frankfort, KY 40601
Telephone: (502) 564-3382
Kentucky National Resources and Environmental Protection Cabinet
Capital Plaza Tower
5th Floor
Frankfort, KY 40601

**Waste Management**
Division of Waste Management
18 Reilly Road
Frankfort, KY 40601
Telephone: (502) 564-6716
**Kentucky Natural Resources and Environmental Protection Cabinet**
**Capitol Plaza Tower**
**5th Floor**
**Frankfort, KY 40601**

**JEFFERSON COUNTY**
**Air Pollution Control**
Air Pollution Control District of Jefferson County
850 Barret Avenue
Louisville, KY 40204-1745
Telephone: (502) 574-6000
Air Pollution Control Board of Jefferson County (same address and phone as above)

**■ LOUISIANA - STATE AGENCY**
**Air Pollution Control**
Department of Environmental Quality
Office of Air Quality and Radiation Protection
7290 Bluebonnet
Baton Rouge, LA 70810
Telephone: (504) 765-0219
Louisiana Department of Environmental Quality
P.O. Box 82135
Baton Rouge, LA 70884

**Waste Management**
Louisiana Dept. of Environmental Quality
7290 Blue Bonnet
Baton Rouge, LA 70884-2178
Telephone: (504) 765-0261

**■ MAINE - STATE AGENCY**
**Air Pollution Control**
Bureau of Air Quality Control
Department of Environmental Protection
State House
Station 17
Augusta, ME 04333
Telephone: (207) 289-2437
Board of Environmental Protection (same address and phone as above)

**(Maine Continued)**

**Waste Management**
Bureau Hazardous Materials and Solid Waste Control
Statehouse
Station 17
Augusta, ME 04333
Telephone: (207) 287-2651
Board of Environmental Protection (same address and phone as above)

## ■ MARYLAND - STATE AGENCY

**Air Pollution Control**
Air & Radiation Management Administration
2500 Broening Highway
Baltimore, MD 21224
Telephone: (410) 631-3255
Air Quality Control Advisory Council (same address as above)

**Waste Management**
Management Administration
2500 Broening Highway
Baltimore, MD 21224
Telephone: (410) 631-3304
Maryland Department of the Environment (same address and phone as above)

## ALLEGANY COUNTY

**Air Pollution Control**
Allegany County Health Department
Willowbrook Road
Cumberland, MD 21502
Telephone: (301) 777-5653
Allegany County Board of Commissioners
County Office Building
3 Pershing Street
Cumberland, MD 21502

## ANNE ARUNDEL COUNTY

**Air Pollution Control**
Air Quality Control Program/Anne Arundel County Health Department
3 Harry S. Truman Parkway
Annapolis, MD 21401
Telephone: (301) 222-7250

## BALTIMORE

**Air Pollution Control**
Baltimore City Health Department
Bureau of Community & Industrial Hygiene
Air Pollution Control
303 E. Fayette Street
4th Floor
Baltimore, MD 21202
Telephone: (410) 396-4428
Fax: (410) 396-5986

## BALTIMORE COUNTY

**Air Pollution Control**
Baltimore County Bureau of Air Quality and Waste Management
401 Bosley Avenue
Towson, MD 21204
Telephone: (410) 887-3775

## FREDERICK COUNTY

**Air Pollution Control**
Frederick County Health Department
350 Montevue Lane
Frederick, MD 21701
Telephone: (301) 694-2165
Frederick County Board of County Commissioners
12 East Church Street
Frederick, MD 21701
Telephone: (301) 694-1100

## HARFORD COUNTY

**Air Pollution Control**
Harford County Health Department
P.O. Box 191
Bel Air, MD 21014-0191
Telephone: (301) 838-3047 ext.33

## HOWARD COUNTY

**Air Pollution Control**
Howard County Health Department
P.O. Box 476
Ellicott City, MD 21043
Telephone: (410) 313-2645
Fax: (410) 313-2648

## MONTGOMERY COUNTY

**Air Pollution Control**
Montgomery County Dept. of Environmental Protection
Office of Environmental Policy and Compliance
101 Monroe Street
Executive Office Building
Rockville, MD 20850
Telephone: (301) 217-2380
Fax: (301) 217-6718

**(Maryland Continued)**
**PRINCE GEORGE'S COUNTY**
**Air Pollution Control**
Prince George's County Health Department
Division of Air Quality Control
10210 Greenbelt Road
Seabrook, MD 20706
Telephone: (301) 794-6800

**Waste Management**
Prince George's County Health Department
Directorate of Environmental Health
10210 Greenbelt Road
Seabrook, MD 20706-2292
Telephone: (301) 794-6800

## ■ MASSACHUSETTS - STATE AGENCY

**Air Pollution Control**
Division of Air Quality Control
One Winter Street
Boston, MA 02108
Telephone: (617) 292-5593

**Waste Management**
Department of Environmental Protection
Bureau of Waste Prevention
One Winter Street
5th Floor
Boston, MA 02108
Telephone: (617) 292-5589
Hazardous Waste Advisory Committee (same address and phone as above)

**BOSTON**
**Air Pollution Control**
Boston Air Pollution Control Commission
Room 805
Boston City Hall
Boston, MA 02201
Telephone: (617) 653-4417
Air Pollution Control Commission (same address and phone as above)

**CENTRAL MASSACHUSETTS**
**Air Pollution Control**
Dept. Environmental Protection Central Region Air Quality Control
75 Grove Street
Worcester, MA 01605
Telephone: (508) 792-7692

**METROPOLITAN BOSTON-NORTHEAST REGION**
**Air Pollution Control**
Merrimack Valley and Metropolitan Boston Air Pollution Control Districts
5 Commonwealth Avenue
Woburn, MA 01801
Telephone: (617) 935-2160

**SOUTHEAST REGION**
**Air Pollution Control**
SE Region Air Quality Control Section/Department of Environmental Protection
Lakeville Hospital
Lakeville, MA 02347
Telephone: (508) 946-2770
Division of Air Quality Control
One Winter Street
Boston, MA 02108

**Waste Management**
Bureau of Waste Prevention: Industrial Waste Water/RCRA
Air Quality Control Solid Waste Mgmt.
Lakeville Hospital
Lakeville, MA 02347
Telephone: (508) 946-2700
Department of Environmental Quality Engineering
One Winter Street
Boston, MA 02108

**WESTERN MASSACHUSETTS**
**Air Pollution Control and Waste Management**
Department of Environmental Protection
Bureau of Waste Prevention
State House West
436 Dwight Street
Springfield, MA 01103
Telephone: (413) 784-1100

## ■ MICHIGAN - STATE AGENCY

**Air Pollution Control**
Air Quality Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, MI 48909
Telephone: (517) 373-7023
Michigan Air Pollution Control Commission (same address and phone as above)

(Michigan Continued)

**Waste Management**

Waste Management Division
Michigan Department of Natural Resources
P.O. Box 30241
Lansing, MI 48909
Telephone: (517) 373-2730

**GRAND RAPIDS**

**Air Pollution Control**

Grand Rapids Air Pollution Control Division
City of Grand Rapids Utilities Department
1101 Monroe N.W.
Grand Rapids, MI 49503
Telephone: (616) 456-3158

**WAYNE COUNTY**

**Air Pollution Control**

Wayne County Air Pollution Control Division
640 Temple
Suite 700
Detroit, MI 48201
Telephone: (313) 832-5000
Fax: (313) 832-5066

**■ MINNESOTA - STATE AGENCY**

**Air Pollution Control**

Air Pollution Control
Minnesota Pollution Control Agency
520 Lafayette Road
St. Paul, MN 55155
Telephone: (612) 296-7331
Minnesota Pollution Control Agency Board (same address and phone as above)

**Waste Management**

Minnesota Pollution Control Agency
Hazardous Waste Division
520 Lafayette Road, N
St. Paul, MN 55155
Telephone: (612) 643-3408 June 30, 1991; (612) 296-7300
Minnesota Pollution Control Agency Board (same address and phone as above)

**BLOOMINGTON**

**Air Pollution Control**

City of Bloomington
Environmental Pollution Section
2215 W. Old Shakopee Road
Bloomington, MN 55431
Telephone: (612) 881-5811

**MINNEAPOLIS**

**Air Pollution Control**

Pollution Control Division
Department of Inspections
Public Health Center
Room 300
250 South 4th Street
Minneapolis, MN 55415
Telephone: (612) 673-5897

**RICHFIELD**

**Air Pollution Control**

City of Richfield
6700 Portland Avenue
Richfield, MN 55423
Telephone: (612) 861-9881

**■ MISSISSIPPI - STATE AGENCY**

**Air Pollution Control**

Mississippi Department of Environmental Quality
2380 Highway 80 West
Jackson, MS 39204
Telephone: (601)961-5171
Mississippi Commission on Environmental Quality
P.O. Box 10385
Jackson, MS 39289-0385

**Waste Management**

Mississippi Department of Environmental Quality
P.O. Box 10389 (2380 Highway 80 West)
Jackson, MS 39289-0385
Telephone: (601) 961-5171
Commission on Environmental Quality (same address and phone as above)

**■ MISSOURI - STATE AGENCY**

**Air Pollution Control**

Missouri Department of Natural Resources/Air Pollution Control Program
205 Jefferson
Jefferson City, MO 65102
Telephone: (314) 751-4817
Missouri Air Conservation Commission (same address and phone as above)

**Waste Management**

Hazardous Waste Program
Division of Environmental Quality
Missouri Department of Natural Resources
205 Jefferson Street
Jefferson, MO 65102
Telephone: (314) 751-3176
Solid Waste Advisory Board (same address and phone as above)

(Missouri Continued)

**GREENE COUNTY-CITY OF SPRINGFIELD**

**Air Pollution Control**

Greene County-City of Springfield Air Pollution Control Authority
227 East Chestnut Expressway
Springfield, MO 65802
Telephone: (417) 864-1662

**KANSAS CITY**

**Air Pollution Control**

Kansas City Air Quality Control Program
21st Floor
City Hall
414 E. 12th Street
Kansas City, MO 64106
Telephone: (816) 274-2501
Fax: (816) 274-2503

**Air Quality Control Board (same address and phone as above)**

**ST. LOUIS CITY**

**Air Pollution Control**

City of Saint Louis Air Pollution Control
1220 Carr Lane Avenue
St. Louis, MO 63104
Telephone: (314) 664-7877
Board of Air Pollution AP (same address and phone as above)

**ST. LOUIS COUNTY**

**Air Pollution Control**

St. Louis County Air Pollution Control Branch
111 South Meramec
Clayton, MO 63105
Telephone: (314) 854-6921
Air Pollution Control Appeal Board
111 South Meramec
Clayton, MO 63105

**SPRINGFIELD (See Greene County-City of Springfield)**

**■ MONTANA - STATE AGENCY**

**Air Pollution Control**

Montana State Department of Health and Environmental Sciences
Air Quality Bureau
Cogswell Building
Helena, MT 59620
Telephone: (406) 444-3454
Board of Health and Environmental Sciences (same address and phone as above)

**Waste Management**

Department of Health and Environmental Sciences
Solid and Hazardous Waste Bureau
Cogswell Building
Helena, MT 59601
Telephone: (406) 444-1430
State Board of Health (same address and phone as above)

**CASCADE COUNTY**

**Air Pollution Control**

Cascade City-County Air Pollution Control Program
1130 17 Avenue S
Great Falls, MT 59405
Telephone: (406) 761-1190
Fax: (406) 761-1192
City-County Board of Health (same address and phone as above)

**MISSOULA COUNTY**

**Air Pollution Control**

Missoula City-County Health Department
301 West Alder Street
Missoula, MT 59802
Telephone: (406) 523-4755
Missoula City-County Air Pollution Control Board (same address and phone as above)

**YELLOWSTONE COUNTY**

**Air Pollution Control**

Yellowstone County Air Pollution Control
3306 2nd Avenue North
Billings, MT 59101
Telephone: (406) 256-6841
Yellowstone County Air Pollution Control Board (same address and phone as above)

**■ NEBRASKA - STATE AGENCY**

**Air Pollution Control**

Air Quality Program
NE Department of Environmental Quality
Suite 400, The Atrium
1200 N Street
P.O. Box 98922
Lincoln, NE 68505
Telephone: (402) 471-2189
Environmental Quality Council (same address and phone as above)

**(Nebraska Continued)**

**Waste Management**
NE Dept of Environmental
Quality/Air & Waste Management
1200 N Street, Suite 400
Lincoln, NE 68509
Telephone: (402) 471-2186
Environmental Quality Council (same address and phone as above)

**LANCASTER COUNTY (See Lincoln-Lancaster County)**

**LINCOLN - LANCASTER COUNTY**

**Air Pollution Control**
Lincoln-Lancaster County Health Department
2200 St. Mary's Avenue
Lincoln, NE 68502
Telephone: (402) 441-8000
Lincoln-Lancaster County Air Pollution Control Advisory Board (same address and phone as above)

**Waste Management**
Environmental Health Division/Lincoln-Lancaster County Health Department
Solid Waste Section
2200 St. Mary's Avenue
Lincoln, NE 68502
Telephone: (402) 471-8000
Hazardous Pollutants Advisory Committee (same address and phone as above)

**OMAHA CITY**

**Air Pollution Control Board**
Air Quality Control Division
5600 South 10 Street
Omaha, NE 68107
Telephone: (402) 444-6015
Omaha City Council (same address and phone as above)

**■ NEVADA - STATE AGENCY**

**Air Pollution Control**
Bureau of Air Quality/Division of Environmental Protection
123 West Nye Lane
Carson City, NV 89710
Telephone: (702) 687-5065
State Environmental commission (same address as above) Telephone: (702) 687-4670

**Waste Management**
Division of Environmental Protection
Bureau of Waste Management
333 W. Nye Lane
Carson City, NV 89710
Telephone: (702) 687-5872 X 3042
**State Environmental Commission (same address as above); Telephone: (702) 687-4670**

**CLARK COUNTY**

**Air Pollution Control**
Health District Division
Clark County Air Pollution Control
625 Shadow Lane
Las Vegas, NV 89127
Telephone: (702) 383-1276
Clark County District Board of Health (same address and phone as above)

**WASHOE COUNTY**

**Air Pollution Control**
Washoe County District Health Department
1001 E. Ninth Street
Reno, NV 89520
Telephone: (702) 328-2491
Washoe County District Board of Health

**■ NEW HAMPSHIRE - STATE AGENCY**

**Air Pollution Control**
Dept. of Environmental Services
Air Resources Division
64 N. Main Street
Caller Box 2033
Concord, NH 03302-2033
Telephone: (603) 271-1370
New Hampshire, Air Resources Council (same address and phone as above)

**Waste Management**
Waste Management Division
Dept. of Environmental Services
6 Hazen Drive
Concord, NH 03301-6509
Telephone: (603) 271-2905
Waste Management Council (same address and phone as above)

## ■ NEW JERSEY - STATE AGENCY

**Air Pollution Control**

New Jersey State Dept. of Environmental Protection and Energy
Air Pollution Control Program
401 East State Street, CN 027
Trenton, NJ 08625
Telephone: (609) 292-6704
Clean Air Council (same address and phone as above)

**Waste Management**

Site Remediation Program
401 East State Street, CN 028
Trenton, NJ 08625
Telephone: (609) 292-1250

## ELIZABETH

**Air Pollution Control**

City of Elizabeth City Hall
Elizabeth, NJ 07201
Telephone: (908) 820-4068
Fax: (908) 820-0112

## HUDSON COUNTY

**Air Pollution Control**

Hudson Regional Health Commission
215 Harrison Avenue
Harrison, NJ 07029
Telephone: (201) 485-7001 (2)
Board of Commissioners (same address and phone as above)

## MIDDLESEX COUNTY (Includes Linden and Rah-way in Union County)

**Air Pollution Control**

Middlesex County Dept. of Environmental Health
Air Pollution Control Program
841 Georges Road
North Brunswick, NJ 08902
Telephone: (908) 745-4350
Fax: (908) 745-2410
County of Middlesex
Board of Chosen Freeholders
1 J.F. Kennedy Square
New Brunswick, NJ 08903

## SUBURBAN (Includes Belleville, Cedar Grove, East Orange, Irvington, Maplewood, Millburn, Montclair, Newark, Nutley, Orange, South Orange, Union, West Caldwell, and West Orange, Livingston)

**Air Pollution Control**

Suburban Regional Health Commission
2 Babcock Place
West Orange, NJ 07052
Telephone: (201) 325-3212
Montclair Health Dept.
205 Claremont Ave
Montclair, NJ 07042

## ■ NEW MEXICO - STATE AGENCY

**Air Pollution Control**

Environment Department/Air Quality Bureau
1190 St. Francis Drive
Santa Fe, NM 87502
Telephone: (505) 827-2850
Environmental Improvement Board (same address and phone as above)

**Waste Management**

Hazardous and Radioactive Materials Bureau
525 Camino De Los Marquez, Suite 4
Santa Fe, NM 87502
Telephone: (505) 827-4300
Fax: (505) 827-4361
Environmental Improvement Board
P.O. Box 26110
Santa Fe, NM 87502

## ALBUQUERQUE - BERNALILLO COUNTY

**Air Pollution Control**

Albuquerque Environmental Health and Energy Department
P.O. Box 1293
Albuquerque, NM 87103
Telephone: (505) 768-2600
Albuquerque-Bernalillo County Air Quality Board
P.O. Box 1293
Albuquerque, NM 87103

**Waste Management**

Environmental Services Division
One Civic Plaza
P.O. Box 1293
Albuquerque, NM 87103
Telephone: (505) 768-2600
Albuquerque Hazardous Waste Management Advisory Committee (same address and phone as above)

## ■ NEW YORK - STATE AGENCY

**Air Pollution Control**
New York Department of Environmental Conservation
Division of Air Resources
50 Wolf Road
Albany, NY 12223-3250
Telephone: (518) 457-7230
State Environmental Board (same address as above)
Telephone: (518) 457-3446

**Waste Management**
Department of Environmental Conservation
Division of Hazardous Substances Regulation
50 Wolf Road
Albany, NY 12233-7250
Telephone: (518) 457-6934

## ALBANY COUNTY

**Air Pollution Control**
Albany County Department of Health
S. Ferry and Green Streets
Albany, NY 12201
Telephone: (518) 447-4580
Albany County Board of Health (same address and phone as above)

## COLUMBIA COUNTY (See State Agency)

## INTERSTATE (See New York Metropolitan Area)

## NASSAU COUNTY

**Air Pollution Control**
Nassau County Department of Health
Center for Environmental Protection
Room 504
240 Old County Road
Mineola, NY 11501
Telephone: (516) 535-3315
Fax: (516) 535-3369
Nassau County Board of Health (same address as above) Telephone: (516) 535-2037

**Waste Management**
Nassau County Department of Health
Center for Environmental Protection
Room 504
240 Old County Road
Mineola, NY 11501
Telephone: (516) 535-3315
Fax: (516) 535-3369
Nassau County Board of Health (same address as above) Telephone: (516) 535-2037

## NEW ROCHELLE (See Westchester)

## NEW YORK

**Air Pollution Control**
Bureau of Air Policy and Programs
59-17 Junction Blvd
Corona, NY 11368
Telephone: (718) 595-3622
Environmental Control Board
Department of Environmental Protection

**Waste Management**
NYC Dept. of Environmental Protection
Division of Hazardous Materials Programs
59-17 Junction Blvd
Elmherst, NY 11373
Telephone: (718) 595-4636

## NEW YORK METROPOLITAN AREA

**Air Pollution Control**
Interstate Sanitation Commission
311 W. 43 Street
New York, NY 10036
Telephone: (212) 582-0380
Interstate Sanitation Commission (same address and phone as above)

## NIAGARA COUNTY

**Air Pollution Control**
Niagara County Health Dept.
Air Resources Bureau
10th and E. Falls Street
Niagara Falls, NY 14302
Telephone: (716) 284-3128
Niagara County Board of Health (same address and phone as above)

## RENSSELAER COUNTY

**Air Pollution Control**
Rensselaer County Department of Health
Division of Environmental Health
County Office Building
1600 Seventh Avenue
Troy, NY 12180
Telephone: (518) 270-2664

**(New York Continued)**

**ROCKLAND COUNTY**

**Air Pollution Control**

Rockland County Department of Health
Air Pollution Control
Sanatorium Road
Pomona, NY 10970-9990
Telephone: (914) 364-2605
Rockland County Board of Health (same address and phone as above)

**SUFFOLK COUNTY**

**Waste Management**

Office of Pollution Control
15 HorseBlock Place
Farmingville, NY 11738
Telephone: (516) 854-2536

**WESTCHESTER COUNTY**

**Air Pollution Control**

Westchester County Department of Health
19 Bradhurst Avenue
1st Floor
Hawthorne, NY 10532
Telephone: (914) 593-5100
Westchester County Board of Health (same address and phone as above)

**Waste Management**

Westchester County Department of Health
Office of Envir. Health Risk Control
112 East Post Road
White Plaines, NY 10601
Telephone: (914) 285-5044
Westchester County Board of Health (same address as above) Telephone: (914) 285-5050

## ■ NORTH CAROLINA - STATE AGENCY

**Air Pollution Control**

Division of Environmental Management
P.O. Box 29535
Raleigh, NC 27626-0535
Telephone: (919) 733-3340
Fax: (919) 733-5317
Environmental Management Commission (same address and phone as above)

**Waste Management**

Division of Solid Waste Management/Hazardous Waste Section
401 Oberlin Rd
PO Box 27687
Raleigh, NC 27611-7687
Telephone: (919) 733-2178 (Section), 733-4996 (Division)
North Carolina Commission for Health Services (same address and phone as above)

**BUNCOMBE-HAYWOOD COUNTIES (See Western North Carolina)**

**CLEVELAND COUNTY**

**Air Pollution Control**

Cleveland County Health Department
315 Grover Street
Shelby, NC 28150
Telephone: (704) 484-5130
Cleveland County Board of Health (same address and phone as above)

**CUMBERLAND COUNTY**

**Air Pollution Control**

227 Fountainhead Lane
Fayetteville, NC 28301
Telephone: (919) 433-3660
Cumberland County Board of Health (same address and phone as above)

**DURHAM COUNTY (See State Agency)**

**FORSYTH COUNTY**

**Air Pollution Control**

Forsyth County Environmental Affairs Department
537 N. Spruce Street
Winston-Salem, NC 27101
Telephone: (919) 727-8060
Forsyth County Environmental Affairs Board (same address and phone as above)

**GASTON COUNTY (See State Agency)**

**HAYWOOD COUNTY (See Western North Carolina Region)**

(North Carolina Continued)

**MECKLENBURG COUNTY**

**Air Pollution Control**

Mecklenburg County Department of Environmental Protection
700 N. Tryon Street, Suite 205
Charlotte, NC 28202
Telephone: (704) 336-5500
Environmental Protection Commission, Advisory Board (same address as above)

**WESTERN NORTH CAROLINA REGION (Includes Buncombe and Haywood Counties)**

**Air Pollution Control**

Western North Carolina Regional Air Pollution Control Board
Buncombe County Courthouse
Asheville, NC 28801-3569
Telephone: (704) 255-5655
Western North Carolina Regional Air Pollution Control Board (same as above)

## ■ NORTH DAKOTA - STATE AGENCY

**Air Pollution Control**

North Dakota State Department of Health
1200 Missouri Avenue
Bismarck, ND 58502-5520
Telephone: (701) 221-5188
Fax: (701) 221-5200
State Air Pollution Advisory Council (same address and phone as above)

**Waste Management**

Waste Management Division/Dept of Health & Consolidated Laboratory
1200 Missouri Avenue
Bismarck, ND 58501
(mailing P.O. Box 5520, Bismarck, ND 58502)
Telephone: (701) 221-5166

## ■ OHIO - STATE AGENCY

**Air Pollution Control**

Ohio Environmental Protection Agency
1800 WaterMark Drive
Columbus, OH 43266-0149
Telephone: (614) 644-2270

**Waste Management**

Ohio Environmental Protection Agency
1800 Water Mark Dr.
P.O. Box 1049
Columbus, OH 43266-0149
Telephone: (614) 644-3020

**AKRON, BARBERTON, KENT, RAVENNA, MEDINA, SUMMIT AND PORTAGE COUNTIES**

**Air Pollution Control**

Akron Regional Air Quality Management District
177 S. Broadway
Akron, OH 44308
Telephone: (216) 375-2480

**BARBERTON (See Akron, etc.)**

**BELMONT COUNTY (See Steubenville)**

**BUTLER COUNTY (See Cincinnati)**

**CANTON**

**Air Pollution Control**

Canton City Health Department
Air Pollution Control Division
420 Market Ave. N.
Canton, OH 44702
Telephone: (216) 489-3385
Canton City-Board of Health (same address and phone as above)

**CARROLL COUNTY (See Steubenville)**

**CINCINNATI (Includes Butler, Clermont, Hamilton, and Warren Counties)**

**Air Pollution Control**

Hamilton County-Southwestern Ohio Air Pollution Control Agency
1632 Central Parkway
Cincinnati, OH 45210
Telephone: (513) 651-9391
Hamilton County Board of Commissioners
1000 Main Street
Cincinnati, OH 45202

**CLARK COUNTY (See Montgomery)**

**CLERMONT COUNTY (See Cincinnati)**

**CLEVELAND**

**Air Pollution Control**

Cleveland Air Pollution Control
1925 St. Clair Avenue
Cleveland, OH 44114
Telephone: (216) 664-2324
Bureau of Technical Services
Board of Building Standards and Appeals
Room 15
City Hall
Cleveland, OH 44114

**(Ohio Continued)**

**COLUMBIANA COUNTY (See Steubenville)**

**DARKE COUNTY (See Montgomery)**

**GREEN COUNTY (See Montgomery)**

**HAMILTON COUNTY (See Cincinnati)**

**HARRISON COUNTY (See Steubenville)**

**IRONTON (See Portsmouth)**

**JEFFERSON COUNTY (See Steubenville)**

**KENT (See Akron, etc.)**

**LAKE COUNTY**
**Air Pollution Control**
Lake County General Health District
Administration Center
105 Main Street
P.O. Box 490
Painesville, OH 44077
Telephone: (216) 357-2543
Board of Health for Lake County General Health District (same address and phone as above)

**LUCAS COUNTY (See Wood and Lucas Counties)**

**MAHONING-TRUMBULL (Includes Youngstown)**
**Air Pollution Control**
Mahoning-Trumbull Air Pollution Control Agency
9 West Front Street
Youngstown, OH 44503
Telephone: (216) 744-1928
Youngstown Board of Health
City hall
26 S. Phelps
Youngstown, OH 44503

**MEDINA COUNTY (See Akron, etc.)**

**MIAMI COUNTY (See Montgomery)**

**MIDDLETOWN, (See Cincinnati)**

**MONROE COUNTY (See Steubenville)**

**MONTGOMERY COUNTY (Includes Clark, Darke, Greene, Miami, Montgomery, and Preble Counties)**
**Air Pollution Control**
Regional Air Pollution Control Agency
451 W. Third Street
P.O. Box 972
Dayton, OH 45422
Telephone: (513) 225-4435

**OREGON (See Toledo)**

**PORTAGE COUNTY (See Akron, etc.)**

**PORTSMOUTH (Includes Ironton)**
**Air Pollution Control**
Portsmouth Local Air Agency
740 Second street
Portsmouth, OH 45662
Telephone: (614) 353-5156
Portsmouth Board of Health (same address and phone as above)

**PREBLE COUNTY (See Montgomery)**

**RAVENNA (See Akron, etc.)**

**ROSSFORD (See Toledo)**

**STEUBENVILLE (Includes Jefferson, Belmont, Columbiana, Monroe, Carroll, and Harrison Counties)**
**Air Pollution Control**
North Ohio Valley Air Authority
814 Adams Street
Steubenville, OH 43952
Telephone: (614) 282-3908
North Ohio Valley Air Authority Control Board
Jefferson County Courthouse
Steubenville, OH 43952

**SUMMIT COUNTY (See Akron, etc.)**

**TOLEDO (Includes Lucas County and City of Rossford)**
**Air Pollution Control**
Toledo Division of Pollution Control
City of Toledo
International Park
26 Main Street
Toledo, OH 43605-2032
Telephone: (419) 693-0350

(Ohio Continued)
**Waste Management**
Toledo Division of Pollution Control
City of Toledo
International Park
26 Main Street
Toledo, OH 43605-2032
Telephone: (419) 693-0350

**WARREN COUNTY See Cincinnati)**

**YOUNGSTOWN (See Mahoning-Trumbull)**

## ■ OKLAHOMA STATE AGENCY

**Air Pollution Control**
Air Quality Service
1000 Northeast 10th Street
Oklahoma City, OK 73117-1299
Telephone: (405) 271-5220
Air Quality Council (same address and phone as above)

**Waste Management**
Hazardous Waste Management Service-0205
Oklahoma State Department of Health
1000 N.E. 10th
Oklahoma City, OK 73117-1299
Telephone: (405) 271-5338
Board of Health (same address and phone as above)

## OKLAHOMA CITY-COUNTY

**Air Pollution Control**
City-County Health Department of Oklahoma County
Air Quality Control Section
921 N.E. 23rd Street
Oklahoma City, OK 73105
Telephone: (405) 427-8651
Oklahoma Air Quality Council
P.O. Box 5355
Oklahoma City, OK 73152

## TULSA CITY COUNTY

**Air Pollution Control**
Tulsa City-County Health Department
4616 E. 15th Street
Tulsa, OK 74112
Telephone: (918) 744-1000
Environmental Advisory Council (same address and phone as above)

**Waste Management**
Tulsa City-County Health Department
4616 E. 15th Street
Tulsa, OK 74112
Telephone: (918) 744-1000
Tulsa City-County Board of Health (same address and phone as above)

## ■ OREGON - STATE AGENCY

**Air Pollution Control**
State of Oregon
Dept. of Environmental Quality Air Quality Division
811 SW 6th Avenue
11th Floor
Portland, OR 97204
Telephone: (503) 229-5397
Environmental Quality Commission (same address and phone as above)

**Waste Management**
Department of Environmental Quality
Hazardous and Solid Waste Division
811 SW 6th Avenue
Portland, OR 97204
Telephone: (503) 229-5913
Environmental Quality Commission (same address as above) Telephone: (503) 229-5395

## LANE COUNTY

**Air Pollution Control**
Lane Regional Air Pollution Authority
225 North 5th
Suite 501
Springfield, OR 97477
Telephone: (503) 726-2514
Board of Directors
Lane Regional Air Pollution Authority (same address and phone as above)

## ■ PENNSYLVANIA - STATE AGENCY

**Air Pollution Control**
Bureau of Air Quality Control/Dept of Environmental Resources
101 South Second Street
P.O. Box 2357
Harrisburg, PA 17105-2357
Telephone: (717) 787-9702
Environmental Quality Board
9th Floor
Fulton Building
P.O. Box 2063
Harrisburg, PA 17120
Telephone: (717) 787-4526

**(Pennsylvania Continued)**

**Waste Management**
Department of Environmental Resources
Bureau of Waste Management
P.O. Box 8471
Harrisburg, PA 17105-8471
Telephone: (717) 787-9870

**ALLEGHENY COUNTY**

**Air Pollution Control**
Bureau of Air Pollution Control
Allegheny County Health Department
301 39th Street
Pittsburgh, PA 15201
Telephone: (412) 578-8111
Board of County Commissioners
119 Court House
Grant Street
Pittsburgh, PA 15222

**PHILADELPHIA**

**Air Pollution Control**
Air Management Services
Philadelphia Department of Public Health
321 University Avenue
Philadelphia, PA 19104
Telephone: (215) 823-7584
Fax: (215) 823-7593
Philadelphia Air Pollution Control Board
7th Flour
1600 Arch Street
Philadelphia, PA 19103

**■ RHODE ISLAND - STATE AGENCY**

**Air Pollution Control**
Rhode Island Division of Air and Hazardous Materials
291 Promenade Street
Providence, RI 02908-5767
Telephone: (401) 277-2808
Department of Environmental Management
9 Hays St.
Providence, RI 02908

**Waste Management**
Division of Air & Hazardous Material
291 Promenade Street
Providence, RI 02908-5676
Telephone: (401) 277-2797

**■ SOUTH CAROLINA - STATE AGENCY**

**Air Pollution Control**
South Carolina Department of Health and Environmental Control
Bureau of Air Quality
2600 Bull Street
Columbia, SC 29201
Telephone: (803) 734-4750
Board of Health and Environmental Control (same address as above)

**Waste Management**
Bureau of Solid and Hazardous Waste Management
2600 Bull Street
Columbia, SC 29201
Telephone: (803) 734-5200
Board of Health and Environmental Control (same address as above)

**COLUMBIA**

**Air Pollution Control**
City of Columbia
1225 Laurel Street
Columbia, SC 29217
Telephone: (803) 733-8320
Pollution Control
Appeals Board (same address and phone as above)

**■ SOUTH DAKOTA - STATE AGENCY**

**Air Pollution Control**
Department of Environmental and Natural Resources
Division of Environmental Regulation
Joe Foss Building
Pierre, SD 57501
Telephone: (605) 773-3351
Board of Minerals and Environment (same address and phone as above)

**Waste Management**
Department of Environment and Natural Resources
Division of Environmental Regulation
319 S. Coteau
c/o 500 East Capitol Avenue
Pierre, SD 57501
Telephone: (605) 773-3153
**Board of Minerals and Environment (same address and phone as above)**

## ■ TENNESSEE - STATE AGENCY

### Air Pollution Control

Tennessee Division of Air Pollution Control
Customs House
4th Floor
701 Broadway
Nashville, TN 37243-1531
Telephone: (615) 741-3931
Tennessee Air Pollution Control Board (same address and phone as above)

### Waste Management

Tennessee Division of Solid Waste Management
Customs House
4th Floor
410 Church Street
L&C Towers
5th Floor
Nashville, TN 37243-1535
Telephone: (615) 543-0780

## CHATTANOOGA-HAMILTON COUNTY

### Air Pollution Control

Chattanooga-Hamilton County Air Pollution Control Bureau
3511 Rossville Blvd.
Chattanooga, TN 37407
Telephone: (615) 867-4321
Chattanooga-Hamilton County Air Pollution Control Board (same address and phone as above)

## DAVIDSON COUNTY (See Nashville-Davidson County)

## HAMILTON COUNTY (See Chattanooga-Hamilton County)

## KNOX COUNTY

### Air Pollution Control

Knox County Department of Air Pollution Control
400 Main Avenue
City-County Building
Room 459
Knoxville, TN 37902
Telephone: (615) 521-2488
Knox County Air Pollution Control Board (same address and phone as above)

## MEMPHIS SHELBY COUNTY

### Air Pollution Control

Memphis and Shelby County Health Department
814 Jefferson Avenue
Memphis, TN 38105
Telephone: (901) 528-3828

## NASHVILLE-DAVIDSON COUNTY

### Air Pollution Control

Metropolitan Health Department of Nashville and Davidson County
311 23rd Avenue, N.
Nashville, TN 37203
Telephone: (615) 340-5653
Metropolitan Board of Health for Nashville and Davidson County (same address and phone as above)

## SHELBY COUNTY (See Memphis-Shelby County)

## ■ TEXAS - STATE AGENCY

### Air Pollution Control

Texas Air Control Board
6330 Highway 290 East
Austin, TX 78723
Telephone: (512) 451-5711
Texas Air Control Board (same address and phone as above)

### Waste Management

Industrial and Hazardous Waste Division
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, TX 78711-3087
Telephone: (512) 908-2334
Texas Water Commission (same address and phone as above)

## BEXAR COUNTY (See San Antonio-Bexar County)

## DALLAS

### Air Pollution Control

City of Dallas
Health and Human Services
Environmental Health Division
320 E. Jefferson LL13
Dallas, TX 75203
Telephone: (214) 948-4435

## EL PASO CITY-COUNTY

### Air Pollution Control

El Paso County Health Unit
222 S. Campbell Street
El Paso, TX 79901
Telephone: (915) 543-3513
El Paso City County Board of Health (same address as above)

**(Texas Continued)**

**FORT WORTH**

**Air Pollution Control**

Fort Worth Air Pollution Control
5000 M.L. King Freeway
Fort Worth, TX 76119
Telephone: (817) 483-0207
Fax: (817) 483-2416

**GALVESTON COUNTY**

**Air Pollution Control**

Galveston County Health District
1207 Oak Street
P.O. Box 939
La Marque, TX 77568
Telephone: (409) 938-2251
Fax: (409) 938-2243
Galveston County United Board of Health (same address and phone as above)

**HARRIS COUNTY**

**Air Pollution Control**

Harris County Pollution Control Department
107 N. Munger
Pasadena, TX 77506
Telephone: (713) 920-2831
*Harris County Commissioners Court*
1001 Preston Street
Houston, TX 77002

**HOUSTON**

**Air Pollution Control**

City of Houston
Bureau of Air Quality Control
7411 Park Place Blvd.
Houston, TX 77087-4441
Telephone: (713) 640-4200
Department of Health and Human Services
8000 N. Stadium Drive
Houston, TX 77054

**Waste Management**

City of Houston
Bureau of Public Health Engineering
7411 Park Place Blvd.
Houston, TX 77087
Telephone: (713) 640-4399
Department of Health and Human Services
8000 Stadium Drive
Houston, TX 77054

**LUBBOCK CITY**

**Air Pollution Control**

Lubbock City Health Department
1902 Texas Avenue
P.O. Box 2548
Lubbock, TX 79408
Telephone: (806) 767-2918
Lubbock Board of Health (same address and phone as above)

**NUECES COUNTY (See Corpus Christi, etc.)**

**SAN ANTONIO-BEXAR COUNTY**

**Air Pollution Control**

Texas Air Control Board
4335 Piedras West
Suite 101
San Antonio, TX 78228
Telephone: (512) 734-7981

**■ UTAH - STATE AGENCY**

**Air Pollution Control**

Division of Air Quality
State of Utah
Department of Environmental Quality
1950 West North Temple
Salt Lake City, UT 84114-4820
Telephone: (801) 536-4000
Utah Air Quality Board (same address and phone as above)

**Waste Management**

Division of Solid and Hazardous Waste
288 North 1460 West
Salt Lake City, UT 84114-4880
Telephone: (801) 538-6170
Utah Solid and Hazardous Waste Control Board (same address and phone as above)

**■ VERMONT - STATE AGENCY**

**Air Pollution Control**

Air Pollution Control Division
Agency of Natural Resources
103 S. Main Street
Waterbury, VT 05671-0402
Telephone: (802) 244-8731

**Waste Management**

Vermont Department of Environmental Conservation
Hazardous Materials Mgmt. Division
103 S. Main Street
Waterbury, VT 05671-0404
Telephone: (802) 244-8702

## ■ VIRGINIA - STATE AGENCY

**Air Pollution Control**
Dept. of Air Pollution Control
P.O. Box 10089
Richmond, VA 23240
Telephone: (804) 786-2378
State Air Pollution Control Board

**Waste Management**
Department of Waste Management
Monroe Building
11th Floor
101 North 14th Street
Richmond, VA 23219
Telephone: (804) 225-2667
Virginia Waste Management Board (same address and phone as above)

## ALEXANDRIA

**Air Pollution Control**
Alexandria Health Department
Division of Environmental Health
Office of Environmental Quality
517 N. Saint Asaph Street
Alexandria, VA 22314
Telephone: (703) 838-4850/4860
Environmental Policy Commission
c/o Alexandria Health Department
City Hall
301 King Street
Alexandria, VA 22314

## FAIRFAX COUNTY

**Air Pollution Control**
Fairfax County Air Pollution Control
10777 Main Street
Suite 115
Fairfax, VA 22030
Telephone: (703) 246-2541

**Waste Management**
Division of Solid Waste Disposal and Resource Recovery(DSWD&RR)
Division of Solid Waste Collection and Recycling (DSWC&R)
12000 Government Center Parkway
Fairfax, VA 22035
Telephone: (703) 324-5230 or (703) 324-5040

## ROANOKE

**Air Pollution Control**
Roanoke City Engineering Department
215 West Campbell Avenue
Roanoke, VA 24011
Telephone: (703) 981-2731

**SALEM (See Roanoke, etc.)**

## ■ WASHINGTON - STATE AGENCY

**Air Pollution Control**
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
Telephone: (206) 459-6256
Ecological Commission (same address and phone as above)

**Waste Management**
Washington State Department of Ecology
Solid and Hazardous Waste Program
4224 6th Ave. S.W.
Lacey, WA 98504-7600
Telephone: (206) 459-6316
Section Supervisor, Hazardous Waste

## BENTON-FRANKLIN-WALLA WALLA COUNTIES

**Air Pollution Control**
Air Pollution Authority
650 George Washington Way
Richland, WA 99352
Telephone: (509) 946-4489
Board of Directors (same address and phone as above)

## NORTHWEST (Includes Island, Skagit and Whatcom Counties)

**Air Pollution Control**
Northwest Air Pollution Authority
302 Pine Street
Suite 207
Mount Vernon, WA 98273
Telephone: (206) 428-1617
NWAPA Board of Directors (same address and phone as above)

**(Washington Continued)**

**OLYMPIC REGION (Includes Clallam, Grays Harbor, Jefferson, Mason, Pacific and Thurston Counties)**

**Air Pollution Control**

Olympic Air Pollution Control Authority (OAPCA)
120 E. State Avenue
Olympia, WA 98501
Telephone: (206) 586-0593
Board of Directors (same address and phone as above)

**PUGET SOUND (Includes King, Kitsap, Pierce and Snohomish Counties)**

**Air Pollution Control**

Puget Sound Air Pollution Control Agency
110 Union Street
Suite 500
Seattle, WA 98101
Telephone: (206) 343-8800
Puget Sound Air Pollution Control Agency Board of Directors (same address and phone as above)

**SOUTHWEST (Includes Clark, Cowlitz, Lewis, Skanamia and Wahkiakum Counties)**

**Air Pollution Control**

Southwest Air Pollution Control Authority
1308 NE 134th Street
Vancouver, WA 98685-2747
Telephone: (206) 574-3058
Southwest Air Pollution Control Board (same address and phone as above)

**SPOKANE COUNTY**

**Air Pollution Control**

Spokane County Air Pollution Control Authority
West 1101 College Avenue
Suite 403
Spokane, WA 99201
Telephone: (509) 456-4727
Spokane County Air Pollution Control Authority Board of Directors (same address and phone as above)

**YAKIMA COUNTY**

**Air Pollution Control**

Yakima County Clean Air Authority
6 S. 2nd Street
Yakima, WA 98901
Telephone: (509) 575-4116
Yakima County Clean Air Authority Board of Directors (same address and phone as above)

**■ WEST VIRGINIA - STATE AGENCY**

**Air Pollution Control**

West Virginia Air Pollution Control Commission
1558 Washington Street, East
Charleston, WV 25311
Telephone: (304) 348-4022
West Virginia Air Pollution Control Commission (same address and phone as above)

**Waste Management**

Department of commerce
Labor and Environmental Resources
Division of Natural Resources
1356 Hansford Street
Charleston, WV 25301
Telephone: (304) 348-5929
West Virginia Water Resources Board
1260 Greenbrier Street
Charleston, WV 25311
Telephone: (304) 348-5002

**■ WISCONSIN - STATE AGENCY**

**Air Pollution Control**

Wisconsin Department of Natural Resources
Bureau of Air Management
Box 7921
Madison, WI 53707
Telephone: (608) 266-7718
Natural Resources Board (same address and phone as above)

**Waste Management**

Wisconsin Department of Natural Resources
101 S Webster
P.O. Box 7921
Madison, WI 53707
Telephone: (608) 266-0833
Natural Resources Board (same address and phone as above)

**EAU CLAIRE CITY-COUNTY**

**Air Pollution Control**

Eau Claire City-County Health Department
720 2nd Avenue
Eau Claire, WI 54701
Telephone: (715) 839-4718
Eau Claire Board of Health (same address and phone as above)

**(Wisconsin Continued)**

**MADISON**

**Air Pollution Control**

Madison Department of Public Health
210 Martin Luther King, Jr. Blvd.
Room 507
Madison, WI 53710
Telephone: (608) 266-4821
Fax: (608) 266-4858
Public Health Commission (same address and phone as above)

**MILWAUKEE COUNTY**

**Air Pollution Control**

Milwaukee County DPW
Professional Services Division
Engineers, Environmental and Energy Services Section
901 N. 9th Street
Milwaukee, WI 53233
Telephone: (414) 278-4874

## ■ WYOMING - STATE AGENCY

**Air Pollution Control**

Air Quality Division
Department of Environmental Quality
122 W. 25th Street
Cheyenne, WY 82002
Telephone: (3070 777-7391
Air Quality Advisory Board (same address and phone as above)

**Waste Management**

Solid Waste Management Program
Dept of Environmental Quality
122 West 25th Street
Cheyenne, WY 82002
Telephone: (307) 777-7752
Environmental Quality Counsel
Barret Building
Cheyenne, WY 82002

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4th Infantry Div (MECH)
ATTN: AFZC-FE

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Alexandria, VA 22333-0001
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Installations: (19)

FORSCOM
Forts Gillem & McPherson 30330
ATTN: FCEN
Installations: (23)

6th Infantry Division (Light)
ATTN: APVR-DE 99505
ATTN: APVR-WF-DE 99703

TRADOC
Fort Monroe 23651
ATTN: ATBO-G
Installations: (20)

Fort Belvoir 22060
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CEWES 39180
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USA Engr Activity, Capital Area
ATTN: Library 22211

US Army ARDEC 07806
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Engr Societies Library
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